

2015-1564

**United States Court of Appeals
for the Federal Circuit**

TRIPLE TEE GOLF, INC., a Florida corporation,

Plaintiff-Appellant,

v.

TAYLOR MADE GOLF COMPANY, INC., a Delaware corporation,

Defendant-Appellee.

*Appeal from the United States District Court for the Southern District of
California in Case No. 3:11-cv-02974-JLSWVG, Judge Janis L. Sammartino*

JOINT APPENDIX

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8 **UNITED STATES DISTRICT COURT**
9 **SOUTHERN DISTRICT OF CALIFORNIA**

10 TRIPLE TEE GOLF, INC.,
11 a Florida corporation,

Plaintiff,

12 vs.

13
14 TAYLOR-MADE/ADIDAS,
15 a Delaware corporation,

Defendant.

Case No. 11-CV-2974 JLS (WVG)

**ORDER GRANTING
DEFENDANT'S MOTION FOR
SUMMARY JUDGMENT**

(ECF No. 40)

16
17 Presently before the Court is Defendant Taylor Made Golf Company, Inc.'s
18 ("Defendant") Motion for Summary Judgment ("MSJ"). (ECF No. 40). Also before the
19 Court is Plaintiff Triple Tee Golf, Inc.'s ("Plaintiff") Response in Opposition to (ECF
20 No. 43) and Defendant's Reply in Support of (ECF No. 44) the Motion. A hearing on
21 the motion was held on February 19, 2015. Having considered the parties arguments
22 and the law, the Court **GRANTS** Defendant's Motion for Summary Judgment.

23 **BACKGROUND**

24 In 2011, Plaintiff filed the initial complaint in this matter, alleging infringement
25 of two patents—United States Patent Nos. 7,128,660 ("the '660 patent") and 7,854,667
26 ("the '667 patent"), which are both titled "Method of Golf Club Performance
27 Enhancement and Articles Resultant Therefrom." (ECF No. 1.) Then, in 2012, the
28 parties filed a Joint Motion to Stay Litigation Pending *Inter Partes* Reexamination of

1 the Patents-in-Suit. (ECF No. 26.) The Court granted the Joint Motion. (ECF No. 27.)

2 On July 20, 2012, Defendant filed a request for an *inter partes* reexamination of
3 the two patents. (MSJ 9, ECF No. 40-1.) The result of the *inter partes* reexamination
4 was the cancellation of all claims of the ‘660 patent except claims 7, 9 and 15. (*Id.* at
5 9–10.) Then, on February 6, 2013, Defendant filed a request for an *ex parte*
6 reexamination of claim 9. (*Id.* at 10.) After the patent examiner rejected claim 9 as
7 anticipated by another patent, Dammen, Plaintiff “responded to the office action by
8 cancelling claims 9 and 15, amending claim 7, and adding several new claims.” (*Id.* at
9 11.) Plaintiff later cancelled some of the newly added claims, and added three new
10 claims. (*Id.* at 11–12.)

11 Ultimately, the United States Patent and Trademark Office’s reexaminations of
12 the patents resulted “in invalidation of all but four claims of the ‘660 patent and
13 invalidation of all claims of the ‘667 patent.” (Status Report 2,¹ ECF No. 29.) The four
14 remaining claims in the ‘660 patent include original claim 7, and claims 20, 21, and 22,
15 which Plaintiff added during the *ex parte* reexamination of the ‘660 patent.² (*Id.* at
16 4–5.) Of the remaining claims, claim 20 is an independent claim, while claims 7, 21
17 and 22 are dependent claims. (*Id.* at 5.)

18 The ‘660 patent “relates to ‘a method of selectably varying the center of gravity
19 and distribution of weighting in a void space in the head of a golf club,”” based on the
20 needs of a particular golfer. (MSJ 7, ECF No. 40-1 (quoting ‘660 Patent 1:19–21).) The
21 ‘660 patent focuses on having a variety of positions for the center of gravity,
22 distribution of weight, or weights within the head of the club. (‘660 Patent 1:64–67.)
23 There are 27 potential locations in the void space located on an orthonormal matrix
24

25 ¹For ease of reference, all page numbers cited to are the CM/ECF numbers at the top
26 of the page.

27 ²Defendant argues that new claim 20 is essentially the same as old claim 9, which the
28 patent examiner rejected as anticipated by Dammen. (MSJ 12 n.3, ECF No. 40-1.) The only
difference is additional language about weighting strategy (c)(I), “which had nothing to do
with the Examiner’s rejection of claim 9 based on Dammen.” (*Id.*) Accordingly, Defendant
states it will argue that claim 20 is invalid over Dammen if this case proceeds. (*Id.*)

1 comprised of three axes (x, y and z). (*Id.* at 2:1–3.) Depending on a golfer’s needs, he
2 or she can adjust the center of gravity, distribution of weight, and/or weights
3 accordingly. (*See id.* at 1:64–2:5.) For example, according to the patent specification,
4 a golfer can modify his or her backspin by weighting means at a low Y, low Z
5 coordinate to increase backspin, or at a high Y, high Z coordinate to decrease backspin.
6 (*Id.* at 2:48–51.) Changing the weighting means can affect backspin, penetration,
7 trajectory and hook or slice. (*Id.* at 2:62–67.)

8 In its First Amended Complaint (“FAC”), Plaintiff alleges that Defendant
9 directly infringed the ‘660 patent by, “among other things, making, using, importing,
10 advertising, offering for sale to the public, [and] selling” various golf clubs. (FAC ¶ 19,
11 ECF No. 31.) Plaintiff also alleges that Defendant “actively [induced] its agents,
12 distributors, and end users, among others, to employ products that infringe the method
13 of [the ‘660 patent],” thereby inducing patent infringement. (*Id.* at ¶ 27.) Finally,
14 Plaintiff alleges Defendant committed contributory patent infringement “by, among
15 other things, selling one or more articles or materials such as weight adjustment guides,
16 booklets, videos and tools, which enable infringement of the patented method of the
17 [‘660 patent], especially such materials adapted for use in the infringement of
18 Plaintiff’s Patent that are not staple articles of commerce.” (*Id.* at ¶ 35.)

19 Defendant responds in the MSJ that it has “discontinued the manufacture and
20 importation of each of the Accused Products.” (MSJ 13, ECF No. 40-1.) Defendant
21 further explains that it has not manufactured in this country nor imported into this
22 country any of the Accused Products since before the issuance of the *Ex Parte*
23 Reexamination Certificate of the ‘660 patent. (*Id.*) Defendant also has no plans to
24 manufacture or import any of the Accused Products in the future. (*Id.*)

25 LEGAL STANDARD

26 I. Summary Judgment

27 Summary judgment is appropriate where the Court is satisfied that “there is no
28 genuine issue as to any material fact and that the moving party is entitled to a judgment

1 as a matter of law.” Fed. R. Civ. Pro. 56(c); *Celotex Corp. v. Catrett*, 477 U.S. 317,
2 322 (1986). Material facts are those that may affect the outcome of the case. *Anderson*
3 *v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). A genuine issue of material fact
4 exists only if “the evidence is such that a reasonable jury could find for the nonmoving
5 party.” *Id.* When the Court weighs the evidence to be presented by the parties, “[t]he
6 evidence of the nonmovant is to be believed, and all justifiable inferences are to be
7 drawn in [his] favor.” *Id.* at 255.

8 The initial burden of establishing the absence of a genuine issue of material fact
9 falls on the moving party. *Celotex*, 477 U.S. at 323. The movant can carry his burden
10 in two ways: (1) by presenting evidence that negates an essential element of the
11 nonmoving party’s case; or (2) by demonstrating to the Court that the nonmoving party
12 “failed to make a sufficient showing on an essential element of her case with respect
13 to which she has the burden of proof.” *Id.* at 322–23.

14 Once the moving party satisfies this initial burden, the nonmoving party must set
15 forth specific facts showing that there is a genuine issue for trial. *Celotex*, 477 U.S. at
16 324. To do so, the nonmoving party must “do more than simply show that there is
17 some metaphysical doubt as to material facts.” *Matsushita Elec. Indus. Co. v. Zenith*
18 *Radio Corp.*, 475 U.S. 574, 586 (1986). Rather, to survive summary judgment, the
19 nonmoving party must “make a showing sufficient to establish the existence of [every]
20 element essential to that party’s case, and on which that party will bear the burden of
21 proof at trial.” *Celotex*, 477 U.S. at 322. Furthermore, the nonmoving party cannot
22 oppose a properly supported motion for summary judgment by “rest[ing] on mere
23 allegations or denials of his pleadings.” *Anderson*, 477 U.S. at 256. Rather, the
24 nonmoving party must identify those facts of record that would contradict the facts
25 identified by the movant. *Id.* at 256–57.

26 **II. Legal Effect of Reexamination**

27 “Any proposed amended or new claim determined to be patentable and
28 incorporated into a patent following a reexamination proceeding will have the same

1 effect as that specified in [35 U.S.C. § 252] for reissued patents.” 35 U.S.C. § 307(b).

2 35 U.S.C. § 252 provides that if

3
4 the claims or the original and reissued patents are substantially identical,
5 [surrender of the original patent] shall not affect any action then pending
6 nor abate any cause of action then existing, and the reissued patent, to
7 the extent that its claims are substantially identical with the original
8 patent, shall constitute a continuation thereof and have effect
9 continuously from the date of the original patent.

10 Accordingly,

11 [a] patentee of a reexamined patent is entitled to infringement damages,
12 *inter alia*, for the period between the date of issuance of the original
13 claims and the date of issuance of the reexamined claims if the original
14 and reexamined claims are identical. Reexamined claims are identical to
15 their original counterparts if they are without substantive change.
16 Furthermore, in determining whether substantive changes have been
17 made, [the court] must discern whether the scope of the claims are
18 identical, not merely whether different words are used. If substantive
19 changes have been made to the original claims, the patentee is entitled
20 to infringement damages only for the period following the issuance of
21 the reexamination certificate.

22 *Laitram Corp. v. NEC Corp.*, 163 F.3d 1342, 1346 (Fed. Cir. 1998) (internal quotations
23 and citations omitted). “An amendment that clarifies the text of the claim or makes it
24 more definite without affecting its scope is viewed as identical for the purpose of §
25 252.” *Bloom Eng’g Co., Inc. v. N. Am. Mfg. Co., Inc.*, 129 F.3d 1247, 1250 (Fed. Cir.
26 1997) (internal citations omitted).

27 Whether a reexamined claim and an original claim are substantially identical is
28 a question of law for the Court to decide. *See Laitram*, 163 F.3d at 1346–47 (citing
29 *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en
30 banc)). To determine whether a reexamined claim is substantially identical to an
31 original claim, “it is necessary to analyze the claims . . . in light of the particular facts,
32 including the prior art, the prosecution history, other claims, and any other pertinent
33 information.” *Id.* at 1347 (internal quotations and citations omitted). This includes
34 following “the well-established principle that a court may not import limitations from

1 the written description into the claims.” *Id.*

2 35 U.S.C. § 252 also establishes intervening rights for reissued patents, which
3 apply to reexamined patents as well. *See* 35 U.S.C. § 307(b). 35 U.S.C. § 252 reads that

4
5 [a] reissued patent shall not abridge or affect the right of any person or
6 that person’s successors in business who, prior to the grant of a reissue,
7 made, purchased, offered to sell, or used within the United States, or
8 imported into the United States, anything patented by the reissued
9 patent, to continue the use of, to offer to sell, or to sell to others to be
used, offered for sale, or sold, the specific thing so made, purchased,
offered for sale, used or imported unless the making, using, offering for
sale, or selling of such thing infringes a valid claim of the reissued
patent which was in the original patent.³

10 This provision gives an accused infringer “the absolute right to use or sell a product
11 that was made, used or purchased before the grant of the reissue [or reexamined] patent
12 as long as this activity does not infringe a claim of the reissue patent that was in the
13 original patent.” *BIC Leisure Products, Inc. v. Windsurfing Int’l, Inc.*, 1 F.3d 1214,
14 1220–21 (Fed. Cir. 1993). This means that “[a]s long the use or sale of the accused
15 product does not infringe a claim of the reissue patent that was also in the original
16 patent, the owner of the reissued patent has no recourse under the Patent Act.” *Id.* at
17 1221. This provision gives an alleged infringer an absolute intervening right “to
18 continue what would otherwise be infringing activity” in regard to those products that
19 were made, purchased, or used prior to the grant of the reissue patent or reexamination
20 certificate. *Seattle Box Co. v. Indus. Crating & Packaging, Inc.*, 756 F.2d 1574, 1579
21 (Fed. Cir. 1985); *see id* at 1221.

22 ANALYSIS

23 New claim 20, which requires selectably employing two of the four claimed
24 weighting strategies, “is most similar to original dependent claim 9,” because “of the
25 two [original] independent claims in the ‘660 patent, claims 1 and 11, only claim 1
26

27 ³35 U.S.C. § 252 also establishes an equitable intervening right which a court may
28 afford to an accused infringer that first makes or uses accused products after reissue, but who
made substantial preparation prior to reissue. Defendant “is not asserting equitable intervening
rights at this time.” (MSJ 17–18, ECF No. 40-1.)

(from which claim 9 depended) [also] recited selectably employing two of four claimed weighting strategies.” (MSJ 12, ECF No. 40-1.) Additionally, new claim 20 requires and, of the original claims, only claim 9 “required that ‘at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.’” (*Id.* (quoting Clark Dec’l ¶ 19, ECF No. 40-2).) Accordingly, the MSJ compares and contrasts the new claims with original, dependent claim 9.

Defendant argues that Plaintiff is not entitled to infringement damages for the time prior to the issuance of the reexamined claims of the ‘660 patent because new claim 20 is not substantially identical to original claim 9, nor are amended claim 7 and new claims 21 and 22 substantially identical to original claim 9. (MSJ 18, 26, ECF No. 40-1.) Accordingly, Defendant argues that it is entitled to summary judgment on each of Plaintiff’s counts in the FAC. (*Id.* at 27.) The Court agrees.

I. New Claim 20

In regard to new claim 20, Defendant argues that it differs from original claim 9 in two ways based on newly added language, which reads, “an increase in a Z-axis value does not correspond to a decrease in the Y-axis value.”⁴ (*Id.* at 18.) First, Defendant argues this added phrase imposes a new requirement that the location of the weighting means along the Y and X axes be adjustable. (*Id.*) Second, Defendant argues that this also requires that the “adjustment is restricted to a path that defines a non-decreasing function between low Y, low Z coordinate to a high Y, high Z coordinate.” (*Id.*)

A. Adjustable Weighting Means

Utilizing the general principles of claim construction, Defendant explains that claim terms are generally “given their ‘ordinary and customary’ meaning, which is ‘the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.’” (*Id.* at 19 (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303,

⁴Plaintiff agrees that new claim 20 and original claim 9 are identical except for the addition of this phrase. (Resp. in Opp’n 7, ECF No. 43.)

1 1312–13 (Fed. Cir. 2005) (*en banc*)).) A claim should be read ““in the context of the
2 entire patent, including the specification,”” but the court should not import limitations
3 from the specification into the claims. (*Id.* (quoting *Phillips*, 415 F.3d at 1313).) Courts
4 consider ““the words of the claims themselves, the remainder of the specification, the
5 prosecution history, and extrinsic evidence concerning relevant scientific principles,
6 the meaning of technical terms, and the state of the art” to discern a claim’s ordinary
7 and customary meaning. (*Id.* (quoting *Phillips*, 415 F.3d at 1314).) In determining a
8 claim’s meaning, a court first considers the words of the claim themselves, then may
9 look to other intrinsic evidence, such as the patent specification and the prosecution
10 history, and then, if necessary, extrinsic evidence. (*See* Resp. in Opp’n 8–9, ECF No.
11 43 (citing *Vitronics Corp. v. Concentronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).)

12 Applying these principles, Defendant explains that the newly added phrase,
13 specifically “an increase in the Z-axis value,” must mean that the weighting means can
14 be adjusted because to increase the Z-axis value requires the weighting means already
15 be “present in the golf club head at another location having a lower Z-axis value.” (*Id.*
16 at 19–20.) The adjustment may correspond to a change in the location of the weighting
17 means along the Y-axis, but may not cause a decrease in the location along the Y-axis.
18 (*Id.*)

19 Defendant argues that this differs from original claim 9,⁵ which “lacked any
20 language indicating that the weighting means must be adjustable within the claimed
21 ranges.” (*Id.* at 20 (quoting Beach Dec’l ¶ 20, ECF No. 40-3).) Original claim 9 read
22 ““providing within said void space weighting means between a low Y, low Z
23 coordinate to increase backspin to a high Y, high Z coordinate”” to decrease backspin.
24 (*Id.* (quoting Beach Dec’l ¶ 20, ECF No. 40-3).) Defendant argues that the original
25 claim’s strategy “was satisfied by simply placing a weighting means at the desired
26 location during design and manufacture, without any implication that its location might
27

28 ⁵Reference to original claim 9 also refers to original claim 1, upon which original claim 9 depended.

1 be adjusted.” (*Id.* (citing Beach Dec’l ¶ 20, ECF No. 40-3).) Defendant supports this
2 argument by noting that all except for one of the ‘660 patent’s embodiments disclose
3 “club heads with fixed weights,” such that they could not be adjusted. (*Id.*; *see e.g.*,
4 Clark Dec’l ¶ 4, Ex. A, ECF No. 40-2).)

5 Defendant contends that the patent examiner confirmed their interpretation of
6 original claim 9 during the *ex parte* reexamination of claim 9, by stating that ““the
7 claim does not recite adjustability of the weights for different weighting strategies”” in
8 response to Plaintiff’s argument that the claim contemplated adjustable weighting
9 means. (*Id.* (quoting Clark Dec’l ¶ 13, Ex. D at p. 56, ECF No. 40-2).) Defendant also
10 asserts that the Board of Patent Appeals and Interferences (now the Patent Trial and
11 Appeal Board) (“Board”), issued a similar statement in regard to claim 1 of the ‘667
12 patent, which “was a continuation-in-part of the ‘660 patent” and which “recited a
13 similar limitation to the weighting strategy” outlined in original claim 9. (*Id.* at 20–21.)
14 The Board, in response to Plaintiff’s assertion that the weighting elements were
15 adjustable, held “that the claims of the ‘667 patent ‘do not require adjustability’ or
16 embody ‘any requirement of a capability of adjusting or moving a weight element along
17 or within the claimed range.’”⁶ (*Id.* at 21 (quoting Clark Dec’l ¶ 23, Ex. K at p. 127,
18 ECF No. 40-2).)

19 Defendant concludes that because new claim 20 provides for adjustable
20 weighting means along the Z and Y axes where original claim 9 did not, the new claim
21 is not substantially identical to the original claim. (*Id.* at 21.)

22 Plaintiff responds to Defendant’s argument that original claim 9 did not require
23 adjustable weighting means by refuting the Declaration of Todd Beach with its own
24 declaration submitted by John P. Gilling, the inventor. (*See* Resp. in Opp’n 13, ECF
25

26 ⁶Plaintiff argues that any reliance on the ‘667 patent prosecution history should be
27 disregarded because the ‘667 patent recited the term “securing” whereas the ‘660 patent recited
28 the term “provided,” and, therefore, the conclusion that the ‘667 patent did not require
adjustable weighting means has no bearing on whether the original claims in the ‘660 patent
require adjustable weighting means. (Resp. in Opp’n 15, ECF No. 43.) The Court declines to
consider the ‘667 patent prosecution history.

1 No. 43.) Gilling explains that the original claim recited adjustability of the weighting
2 means based on the phrases “‘to modify back spin,’ ‘to modify ball penetration’ and ‘to
3 modify ball trajectory’” in parts (c)(I), (c)(ii), and (c)(iii) of the original claim. (Gillig
4 Dec’l ¶ 20, ECF No. 43-2.) Gillig asserts that the term modify “inherently indicates a
5 capability of adjustment,” as does the reference in the claim to the term “between,”
6 which allows the coordinate of the weighting means to fall within a given range. (*Id.*)
7 Gillig further argues against Defendant’s contention that the original claim allowed for
8 the placement of the weighting means at a given spot during design and manufacture,
9 “without ability to adjust its location,” by asserting that the continued use of the terms
10 “modify” and “between,” along with Figure 5 in the ‘660 patent “should render beyond
11 question that [the ‘660 patent] always related to adjustable weighting locations within
12 a 3x3x3 orthonormal matrix of weighting elements.” (*Id.* at ¶ 21.)

13 As an initial matter, the Court confirms that determining whether a reexamined
14 claim and an original claim are substantially identical is a question of law for the Court
15 to decide. *See id.* at 1346–47 (citing *Markman v. Westview Instruments, Inc.*, 52 F.3d
16 967, 970–71 (Fed. Cir. 1995) (en banc)). Accordingly, Plaintiff’s suggestion that
17 disagreements among the declarations submitted by each party preclude a finding of
18 summary judgment are misplaced. The Court may look to the extrinsic evidence
19 submitted by each side to construe a term if it cannot discern a claim’s meaning based
20 on the words themselves or the other intrinsic evidence. *Vitronics Corp. v.*
21 *Conceptronic, Inc.*, 90 F.3d 1576, 1585 (Fed. Cir. 1996). Given the hierarchy of
22 evidence and the requirement that extrinsic evidence only be relied upon if necessary,
23 it is not even certain that the Court would consider the declarations in its construction
24 of new claim 20 and old claim 9.

25 The parties do not disagree that new claim 20 requires adjustable weighting
26 means, but do disagree over whether original claim 9 also required such adjustability.
27 The Court agrees with Defendant that new claim 20 requires adjustable weighting
28 means whereas old claim 9 did not require such adjustability and, therefore, that new

1 claim 20 is not substantially identical to original claim 9.

2 The Court finds that Gillig's reliance on the term "modify" in original claim 9
3 unpersuasive because, as Defendant asserts in its Reply, "modify" refers to altering
4 backspin, ball penetration, and ball trajectory, and not modifying the placement of the
5 weighting means. (Reply 7, ECF No. 44.) Similarly, the Court concludes that Gillig's
6 contention that the word "between" in original claim 9 represents ability to adjust the
7 weighting means within a given range equally unpersuasive because that simply means
8 that the weighting means could have been placed within the range during design and
9 manufacture. Original claim 9 recites "providing . . . weighting means between a low
10 Y, low Z coordinate . . . to a high Y, high Z coordinate." ('660 Patent 7:66-8:2.)
11 Nowhere in section (c)(I) of original claim 9, nor in the rest of the original claim is
12 there a suggestion that the weighting means must be adjustable; they must simply be
13 provided within the given range. Accordingly, an analysis of the words in original
14 claim 9 leads the Court to conclude that it did not require adjustable weighting means.

15 Additionally, the '660 patent prosecution history confirms this conclusion.
16 During the reexamination of the '660 patent, the patent examiner stated that "[t]he
17 claim does not recite adjustability of the weights for different weighting strategies."
18 (Clark Dec'l, Ex D, Office Action in *Ex Parte* Reexamination: Non-Final Rejection 55,
19 ECF No. 40-2.) Lastly, the Court's analysis accords with the general principle that
20 limitations found solely in the patent specification are not imported into claims for
21 purposes of claim construction. Gillig's statement that Figure 5 from the '660 patent
22 specification somehow supports a finding of adjustability, even if correct, cannot be
23 used to import limitations into the claim. In light of the Court's conclusion that original
24 claim 9 did not require adjustable weighting means, the Court finds that new claim 20
25 and original claim 9 are not substantially identical.

26 ///

27 ///

28 ///

1 **B. Restrictions on Adjustment of Weighting Means**

2 Defendant further argues that new claim 20 differs from original claim 9 because
3 it “clearly contemplates a path for adjusting the weighting means in which the Z-axis
4 value increases in order to decrease backspin,” and requires that ““an increase in Z-axis
5 value cannot correspond to a decrease in Y-axis value.”” (MSJ 21, ECF No. 40-1.) This
6 “defines a non-decreasing function between the Z- and Y-axis values of the weighting
7 means.” (*Id.* (citing Beach Dec’1 ¶ 24, ECF No. 40-3).) An increase in the Z-axis value
8 “precludes a decrease in the Y-axis value of the weighting means, implicitly allowing
9 the Y-axis value to increase or remain constant.” (*Id.* (citing Beach Dec’1 ¶ 24, ECF
10 No. 40-3).)

11 Defendant asserts that original claim 9 did not contain the restriction that as the
12 value of the Z-axis increases, the value of the Y-axis must increase or stay constant.
13 (*Id.* at 22.) Original claim 9 “allowed the weighting means to be positioned anywhere
14 between a low Y, low Z coordinate to a high Y, high Z coordinate,” which “meant that
15 the weighting means could be provided just about any place within the golf club head.”
16 (*Id.* (citing Beach Dec’1 ¶ 25, ECF No. 40-3).)

17 Defendant argues that Plaintiff’s assertion that new claim 20 does not change the
18 scope of original claim 9 is incorrect because the only way for Plaintiff to be correct
19 is if “the *only* way to achieve decreasing backspin between a low Y, low Z coordinate
20 to a high Y, high Z coordinate . . . would be to follow a path defined by a non-
21 decreasing function,” such that backspin would only decrease if an increase in the
22 value of the Z axis does not correspond with a decrease in the value of the Y-axis. (*Id.*)
23 Defendant explains that decreasing backspin can be achieved by increasing the value
24 along the Z-axis with a corresponding decrease along the Y-axis, as long as “the
25 backspin change from a positive movement along the Z-coordinate is larger than the
26 backspin change from a negative movement along the Y-coordinate.”⁷ (*Id.* at 24.)

27
28 ⁷Defendant provides a comprehensive explanation of the center of gravity of golf club
heads and its affect on backspin to show that a decrease in backspin need not be the result of
a increase along the Z-axis without any corresponding decrease along the Y-axis. (See MSJ

1 Therefore, Defendant argues that new claim 20 has a different scope than original claim
2 9 because the limitation imposed by new claim 20 was not inherent in original claim
3 9. (*Id.* at 26.) Accordingly, Defendant argues that the new claim is not substantially
4 identical to the original claim in regard to the restrictions it imposes on the path of the
5 weighting means. (*Id.*)

6 Plaintiff, in contrast, argues that the phrase added to new claim 20 does not
7 change the scope of original claim 9 by restricting the adjustable weighting means to
8 a specific path, which, it contends, Gillig's declaration proves. (*See* Resp. in Opp'n 13,
9 ECF No. 43.) Gillig asserts that the added language in new claim 20 "simply assured
10 that Strategy (c)(I) could not possibly include any aspect of the strategy of Dammen,"
11 which calls for an increase along the Z-axis to correspond with a decrease along the Y-
12 axis, and, "therefore did not narrow, broaden or change the scope of original Claims
13 1 and 9." (Gillig Dec'l ¶ 22, ECF No. 43-2.) Gillig agrees that the new phrase can be
14 described as "'a non-decreasing function between a low Y, low Z coordinate to a high
15 Y, high Z coordinate,'" and concurs that this function is not the only way to change
16 backspin. (*Id.* at ¶¶ 24, 27 (quoting Beach Dec'l ¶ 24, ECF No. 40-3).) However, Gillig
17 states that the '660 patent "requires concurrent incrementation of weighting along each
18 Y and Z axis *and prohibits any deviation or excursion* from that such strategy," and
19 that the original patent never permitted an increase in the Z axis to correspond with a
20 decrease in the Y axis. (*Id.* at ¶ 32 (emphasis in original).) Plaintiff briefly concludes
21 that Figure 5 in the '660 patent shows that "the weighting path of Claim 9 was always
22 restricted." (Resp. in Opp'n 13, ECF No. 43.)

23 Similar to the first issue, the parties agree that new claim 20 restricts the path of
24 the weighting means, that the added language represents a non-decreasing function, and
25 that the non-decreasing function is not the only way to modify backspin. The parties
26

27 _____
28 22-26, ECF No. 40-1.) Defendant also notes it has determined that the weighting strategy at
issue, as recited in original claim 9 and new claim 20, is incorrect because a low Y, low Z
coordinate decreases backspin and a high Y, high Z coordinate increases backspin, but that
does not change its analysis regarding the scope of the two claims. (*Id.* at 23, n.6.)

1 disagree, however, over whether the restricted path recited in new claim 20 was
2 inherent in original claim 9.⁸ The Court concludes that restriction on the path of the
3 weighting means was not inherent in the original claim and that, therefore, new claim
4 20 is not substantially identical to original claim 9 for this additional reason.

5 Beginning with an analysis of the words of the claims themselves, it is clear that
6 original claim 9 did not recite the limitation included in new claim 20 which reads “in
7 which an increase in a Z-axis value cannot correspond to a decrease in Y-axis value.”
8 (‘660 Ex Parte Reexamination Certificate 2:15–18.) The words of original claim 9
9 themselves do not limit the path for the weighting means. Plaintiff argues that
10 notwithstanding the lack of the recitation of this limitation in the original claim, the
11 ‘660 patent specification, particularly Figure 5, make this limitation inherent in the
12 original claim such that the amendment merely clarified the original claim. This
13 argument, however, is contrary to the well-established principle that prohibits courts
14 from importing limitations found only in the patent specification into the claims.
15 *Laitram*, 163 F.3d at 1347 (noting “the well-established principle that a court may not
16 import limitations from the written description into the claims”). The Court finds that
17 nothing in the original claims suggest that the weighting means have to be placed at a
18 specific location in accordance with the path shown in Figure 5 and that, therefore, new
19 claim 20 is not substantially identical to original claim 9.

20 The ‘660 patent prosecution history is also instructive. That original claim 9 was
21 cancelled at least partly on the ground that it was anticipated by Dammen is telling.
22 Contrary to Plaintiff’s belief that the weighting path in original claim 9 was always
23 restricted per Figure 5, the patent examiner, in response to then-pending claim 28,
24 which was similar to original claim 9, explicitly “advised the Patent Owner’s rep to
25 amend claim 28 to add recitation along the lines that a weighting strategy of increasing
26 the Z axis does not include decreasing the Y-axis,” the very path Dammen teaches.

27
28 ⁸The parties also disagree over the precise meaning of the added language in new claim 20; however, “the main dispute is whether any such limitation was inherent in original claim 9.” (Reply 9, ECF No. 44.)

(Clark Dec'l, Ex. F, *Ex Parte* Reexamination Interview Summary 79, ECF No. 40-2.) The patent examiner seems to have been assisting the patent owner in his endeavor to overcome Dammen and specifically suggested the inclusion of a more definite weighting path to ensure that it excluded the path taught by Dammen. The patent examiner did not conclude that this limitation was inherent in original claim 9 and neither does the Court.

In addition, the difference between new claim 20 and original claim 9 is similar to the situation in *Bloom*, in which the patent owner added limiting words to claims to overcome prior art. *Bloom Eng'g Co., Inc.*, 129 F.3d at 1250–51. In that case, the patent owner argued that the newly added words “merely clarified” what was already implicit in the claims based on the patent specification. *See id.* at 1250. The court, however, affirmed the district court’s finding that the newly added limitation was not recited in the original claims, that the addition was necessary to overcome prior art, and that the claims were sufficiently narrowed and limited by the additional language that it constituted a substantive change. *Id.* at 1251. In light of the words of the claims themselves, the patent prosecution history, and the guidance provided by the Federal Circuit in *Bloom*, the Court concludes that new claim 20 limits the scope of the original claim and does not, as Plaintiff suggests, merely clarify the claim.

II. Amended Claim 7 and New Claims 21 and 22

Defendant argues that amended claim 7, and new claims 21 and 22 are also not substantially identical to original claim 9 because they are all dependent upon new claim 20. (MSJ 26, ECF No. 40-1.) Accordingly, because these three claims “incorporate all of the limitations of claim 20,” they are different in scope than original claim 9. (*Id.* (citing 35 U.S.C. § 112(d) (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”).)

Plaintiff initially argued that new claims 21 and 22 should not be summarily dealt with based on the analysis of new claim 20 because, unlike new claim 20, they should be compared with original claim 11 (part (b)) and original claim 12 (part (e)(iii))

1 respectively. (Opp’n 15, ECF No. 43.) However, at the hearing on the instant motion,
2 Plaintiff’s counsel agreed that if the Court finds that new claim 20 is not substantially
3 identical to original claim 9, then the other remaining claims follow suit.

4 In light of the fact that amended claim 7 and new claims 21 and 22 depend on
5 new claim 20, which the Court, as explained above, finds is not substantially identical
6 to original claim 9, the Court concludes that these claims are also not substantially
7 identical to original claim 9. A dependent claim incorporates “by reference all the
8 limitations of the claim to which it refers,” so new claims 21 and 22, even if most
9 similar to original claims 11 and 12, also require comparison to original claim 9 (and
10 original claim 1 for reasons explained above) as a result of their dependence. 35 U.S.C.
11 § 112(d). The comparison to original claim 9 is the same regardless of whether it is
12 brought about by analyzing amended claim 7 or new claims 20, 21 or 22. Therefore, the
13 Court finds that amended claim 7, and new claims 21 and 22, are not substantially
14 identical to the original claim.

15 **III. Summary Judgment**

16 Based on the conclusion that none of the current claims of the ‘660 patent are
17 substantially identical to original claim 9, Defendant argues that it is entitled to
18 summary judgment on all three of Plaintiff’s counts. (MSJ 27, ECF No. 40-1.)

19 First, Defendant asserts that because none of the claims in the reexamined ‘660
20 patent are substantially identical to the original ‘660 patent, “the reexamined ‘660
21 patent only has effect from the issuance of the *Ex Parte* Reexamination Certificate on
22 June 12, 2014.” (*Id.* (citing 35 U.S.C. §§ 252, 307(b)).) Accordingly, Defendant argues
23 that Plaintiff does not have a viable claim for any alleged direct infringement prior to
24 June 12, 2014. (*Id.*) Defendant further contends that it has “an absolute intervening
25 right from June 12, 2014 to continue to use, offer to sell, and sell any Accused Products
26 that were made in the U.S., or imported into the U.S., before that date,” such that it
27 cannot be liable for direct infringement with respect to products made or imported
28

1 before the issuance of the *Ex Parte* Reexamination Certificate.⁹ (*Id.* (citing *BIC*
2 *Leisure Products*, 1 F.3d at 1220-21).) Defendant also argues that because it has not
3 manufactured in the U.S., nor imported into the U.S., any new Accused Products since
4 June 12, 2014, Plaintiff has no viable claim against Defendant for ongoing direct
5 infringement. (*Id.* at 27–28.)

6 Next, Defendant argues that Plaintiff’s claims for indirect and contributory
7 infringement must also fail because “[t]he law is clear that one cannot be liable for
8 indirect infringement without evidence of direct infringement by third parties.” (*Id.* at
9 28 (citing *Joy Tech., Inc. v. Flakt, Inc.*, 6 F.3d 770, 774 (Fed. Cir. 1993) (“Liability for
10 either active inducement of infringement or for contributory infringement is dependent
11 upon the existence of direct infringement.”)).) Defendant explains that each of its
12 distributors, resellers, and end user-customers have the same absolute intervening
13 rights under 35 U.S.C. §§ 252 and 307(b) as it does, such that there are also no acts of
14 direct infringement by third parties. (*Id.* at 28–29.) If there is no direct infringement,
15 then, Defendant argues, Plaintiff’s claims for indirect infringement must also fail. (*Id.*
16 at 29.)

17 In light of the Court’s finding that new claim 20 is not substantially identical to
18 old claim 9, the Court concludes that Defendant is entitled to summary judgment as to
19 all three of Plaintiff’s counts in its FAC. A finding that the new claims are not
20 substantially identical to the original claims precludes recovery for infringement from
21 anytime prior to the issuance of the reexamination certificate on June 12, 2014.

23 ⁹Plaintiff argues, in contrast, that Defendant does not have an absolute intervening right
24 because Defendant did not rely on any “perceived infirmities” in the original patent in making
25 its decision to manufacture, sell, and import the accused products. (Resp. in Opp’n 20, ECF
26 No. 43.) To support this argument, Plaintiff relies on an unreported district court case, *Quad*
27 *Envtl. Technologies v. Union Sanitary Dist.*, 17 U.S.P.Q. 2d 1667 (N.D. Cal. 1990), which has
28 been reversed, in which the judge denied intervening rights on the ground that Defendant did
not establish that it relied on infirmities in the original patent. (*Id.*) Although it is unclear,
Plaintiff may be arguing that Defendant is not entitled to equitable intervening rights under 35
U.S.C. § 252, which the Court may award; however, Defendant never asserts that it is entitled
to equitable rights, but rather argues that it is entitled to absolute intervening rights also
outlined in 35 U.S.C. § 252. Regardless of Plaintiff’s intended purpose for including this
argument, the Court does not find it persuasive.

1 Plaintiff offers no evidence of infringement subsequent to the issuance of the
2 reexamination certificate. Further, without direct infringement there can be no indirect
3 infringement. *Joy Tech., Inc. v. Flakt, Inc.*, 6 F.3d 770, 774 (Fed. Cir. 1993) (“Liability
4 for either active inducement of infringement or for contributory infringement is
5 dependent upon the existence of direct infringement.”).

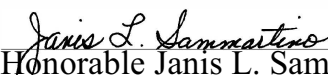
6 The Court concludes that Defendant and its distributors, resellers, and end user-
7 customers have absolute intervening rights pursuant to 35 U.S.C. § 252 because the
8 Accused Products were made or imported into the United States prior to the issuance
9 of the reexamination certificate. Defendant does not refute the fact that Plaintiff has not
10 made or imported Accused Products since June 12, 2104. Gillig does state that “all of
11 the R9 and R11 series [golf clubs] sold by Defendant could not have reached
12 distributors, retailers and end users by June 12, 2014;” however, the inquiry is whether
13 the Accused Products were made or imported into the United States by that date, not
14 whether they reached sellers or customers. *See BIC Leisure Products*, 1 F.3d at 1221
15 (absolute intervening rights cover “products already made at the time of reissue”).
16 Accordingly, Defendant has absolute intervening rights in regard to the Accused
17 Products.

18 CONCLUSION

19 For the aforementioned reasons, the Court finds that Defendant is entitled to
20 judgment as a matter of law, and **GRANTS** Defendant’s MSJ. The Clerk of the Court
21 shall close the file.

22 **IT IS SO ORDERED.**

23
24 DATED: March 23, 2015

25 
26 Honorable Janis L. Sammartino
27 United States District Judge
28



United States District Court

SOUTHERN DISTRICT OF CALIFORNIA

Triple Tee Golf, Inc., a Florida
Corporation

Plaintiff,

V.

Taylor-Made/Adidas, a Delaware
Corporation

Defendant.

Civil Action No. 11cv2974-JLS(WVG)

JUDGMENT IN A CIVIL CASE

Decision by Court. This action came to trial or hearing before the Court. The issues have been tried or heard and a decision has been rendered.

IT IS HEREBY ORDERED AND ADJUDGED:

that having considered the parties arguments and the law, the Court grants Defendant's Motion for Summary Judgment. Defendant is entitled to judgment as a matter of law.

Date: 3/23/15

CLERK OF COURT
JOHN MORRILL, Clerk of Court
By: s/ J. Ortiz

J. Ortiz, Deputy

AppealFC,CLOSED,ENE

**U.S. District Court
Southern District of California (San Diego)
CIVIL DOCKET FOR CASE #: 3:11-cv-02974-JLS-WVG**

Triple Tee Golf, Inc. v. Taylor-Made/Adidas
Assigned to: Judge Janis L. Sammartino
Referred to: Magistrate Judge William V. Gallo
Demand: \$9,999,000
Case in other court: USCA Federal Circuit, 15-01564
Cause: 35:271 Patent Infringement

Date Filed: 12/20/2011
Date Terminated: 03/23/2015
Jury Demand: Plaintiff
Nature of Suit: 830 Patent
Jurisdiction: Federal Question

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V.

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Counter Claimant

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represented by **Gary A Clark**
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V.

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Date Filed	#	Docket Text
12/20/2011	<u>1</u>	COMPLAINT with Jury Demand against Tayor-Made/Adidas (Filing fee \$ 350 receipt number 0974-4285834.), filed by Triple Tee Golf, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B) The new case number is 3:11-cv-2974-WQH-WVG. Judge William Q. Hayes and Magistrate Judge William V. Gallo are assigned to the case. (Catanzarite, Kenneth)(yeb)(tel) (Entered: 12/21/2011)
12/20/2011	<u>2</u>	REPORT on the filing or determination of an action regarding patent and/or trademark number(s) *7,128,660*, *7,854,667* cc:USPTO (yeb)(tel) (Entered: 12/21/2011)
12/21/2011	<u>3</u>	Summons Issued. Counsel receiving this notice electronically should print this summons and

		serve it in accordance with Rule 4, Fed.R.Civ.P and LR 4.1. (yeb)(tel) (Entered: 12/21/2011)
02/10/2012	4	Minute Order: Judge William Q. Hayes has declined assignment pursuant to General Order 598. Judge Janis L. Sammartino has been randomly assigned. The new case number is 11cv2974-JLS(WVG) (tel) (Entered: 02/10/2012)
02/10/2012	5	Corporate Disclosure Statement by Taylor-Made/Adidas identifying Corporate Parent adidas AG, Corporate Parent adidas North America, Inc. for Taylor-Made/Adidas.. (Clark, Gary) (atty contacted re cert of service) (lmt). (Entered: 02/10/2012)
02/10/2012	6	Joint MOTION for Extension of Time to File Answer by Taylor-Made/Adidas. (Clark, Gary) (lmt). (Entered: 02/10/2012)
02/13/2012	7	SUMMONS Returned Executed by Triple Tee Golf, Inc.. Taylor-Made/Adidas served. (Catanzarite, Kenneth) (lmt). (Entered: 02/13/2012)
02/14/2012	8	CERTIFICATE OF SERVICE by Taylor-Made/Adidas re 5 Corporate Disclosure Statement (Clark, Gary) (lmt). (Entered: 02/14/2012)
02/14/2012	9	CERTIFICATE OF SERVICE by Taylor-Made/Adidas re 6 Joint MOTION for Extension of Time to File Answer (Clark, Gary) (lmt). (Entered: 02/14/2012)
02/15/2012	10	NOTICE of Appearance by Bridgette Arlisa Agness on behalf of Taylor-Made/Adidas (Agness, Bridgette) (lmt). (Entered: 02/15/2012)
02/16/2012	11	ORDER granting 6 Joint Motion for Extension of Time to Answer: Taylor-Made/Adidas answer due 3/14/2012. Signed by Judge Janis L. Sammartino on 2/16/12. (lmt) (Entered: 02/16/2012)
03/14/2012	12	ANSWER to 1 Complaint, <i>Affirmative Defenses</i> , COUNTERCLAIM against Triple Tee Golf, Inc. by Taylor-Made/Adidas.(Agness, Bridgette) (atty contacted re wrong s/) (lmt). (Entered: 03/14/2012)
03/14/2012	13	NOTICE AND ORDER for Early Neutral Evaluation Conference: Early Neutral Evaluation set for 5/7/2012 at 02:00 PM in Courtroom F before Magistrate Judge William V. Gallo. Signed by Magistrate Judge William V. Gallo on 3/14/12.(lmt) (Entered: 03/14/2012)
04/10/2012	14	Amended NOTICE AND ORDER for Early Neutral Evaluation Conference and Case Management Conference: The Early Neutral Evaluation set for 5/7/12 is vacated and reset for 5/25/2012 at 09:00 AM in Courtroom F before Magistrate Judge William V. Gallo. Signed by Magistrate Judge William V. Gallo on 4/10/12.(lmt) (jcj). (Entered: 04/10/2012)
04/17/2012	15	ANSWER to 12 Answer to Complaint, Counterclaim by Triple Tee Golf, Inc.. (Catanzarite, Kenneth) (atty contacted re s/ cert of service) (lmt). (Entered: 04/17/2012)
05/03/2012	16	PRO HAC VICE APPOINTED: Melvin K. Silverman appearing for Plaintiff Triple Tee Golf, Inc.(All non-registered users served via U.S. Mail Service)(sjt) (jrd) (Entered: 05/03/2012)
05/21/2012	17	

		AMENDED ORDER For Early Neutral Evaluation: It is hereby ordered that the ENE previously set for 5/25/2012 at 9:00 AM is hereby vacated and reset for 6/22/2012 at 9:00 AM in Courtroom F before Magistrate Judge William V. Gallo. In the event the case does not settle at the Early Neutral Evaluation Conference, the parties shall also be prepared to participate in a Case Management Conference. Signed by Magistrate Judge William V. Gallo on 5/21/2012.(All non-registered users served via U.S. Mail Service)(leh) (Entered: 05/22/2012)
06/15/2012	18	REPORT of Rule 26(f) Planning Meeting. (Clark, Gary) (cge). (Entered: 06/15/2012)
06/15/2012	19	Amended Proof Of Service to 18 Report of Rule 26(f) Planning Meeting by Tayor-Made/Adidas. (Clark, Gary) Modified text on 6/18/2012 (mtb). (Entered: 06/15/2012)
06/18/2012	20	Minute Entry for proceedings held before Magistrate Judge William V. Gallo: Status Conference held on 6/18/2012(no document attached) (mcb) (Entered: 06/18/2012)
06/20/2012	21	MINUTE ORDER. A telephonic Status Conference was held on June 18, 2012. The Early Neutral Evaluation Conference set for June 22, 2012, at 9:00 a.m., is hereby vacated. A Telephonic Status Conference set for 7/13/2012 08:30 AM before Magistrate Judge William V. Gallo. Signed by Magistrate Judge William V. Gallo on 6/20/2012.(All non-registered users served via U.S. Mail Service) (mtb). (Entered: 06/20/2012)
06/22/2012	22	MOTION to Substitute Attorney by Triple Tee Golf, Inc.. (Attachments: # 1 Proposed Order)(Daghighian, Sepehr) (jpp). (Entered: 06/22/2012)
06/26/2012	23	ORDER granting 22 Motion to Substitute Attorney. Attorney Kenneth Joseph Catanzarite terminated and attorney Sepehr Daghighian substituted as attorney of record for Plaintiff. Signed by Judge Janis L. Sammartino on 6/26/2012. (All non-registered users served via U.S. Mail Service)(mtb). (jrl). (Entered: 06/26/2012)
07/13/2012	24	Minute Entry for proceedings held before Magistrate Judge William V. Gallo: Status Conference held on 7/13/2012(no document attached) (mcb) (Entered: 07/13/2012)
07/13/2012	25	MINUTE ORDER. Defendant has represented to the Court that it intends to file a Motion to Stay the Proceedings in this case. Therefore, the Court will not issue a discovery schedule until the Honorable Janis L. Sammartino, United States District Judge, has issued a ruling on Defendants anticipated Motion to Stay. Signed by Magistrate Judge William V. Gallo on 7/13/2012.(All non-registered users served via U.S. Mail Service)(mtb) (Entered: 07/13/2012)
07/20/2012	26	Joint MOTION to Stay <i>Litigation Pending Inter Partes Reexamination Of The Patents-In-Suit</i> by Tayor-Made/Adidas. (Clark, Gary) (cge). (Entered: 07/20/2012)
07/25/2012	27	

		ORDER granting 26 Joint Motion to Stay Pending Reexamination of the Patents-In-Suit. Signed by Judge Janis L. Sammartino on 7/25/2012. (All non-registered users served via U.S. Mail Service) (mtb). (Entered: 07/25/2012)
07/24/2014	28	NOTICE of Hearing: Status Hearing re stay pending patent re-examination set for 8/28/2014 01:30 PM before Judge Janis L. Sammartino. Counsel shall efile a status report by 8/21/2014 (no document attached) (acr) (Entered: 07/24/2014)
08/21/2014	29	STATUS REPORT by Tayor-Made/Adidas. (Clark, Gary) (yeb). (Entered: 08/21/2014)
08/28/2014	30	Minute Entry for proceedings held before Judge Janis L. Sammartino : Telephonic Status Hearing held; plaintiff to file amended complaint by 9/15/2014; defendant's answer/response to complaint by 9/26/2014; response to counter-claim by 10/10/2014 (Court Reporter/ECR Gayle Wakefield / CRD A Ramos / Plaintiff Attorney Melvin K. Silverman / Defendant Attorney Gary A. Clark & Bridget Agnes)(no document attached) (acr) (Entered: 08/28/2014)
09/15/2014	31	AMENDED COMPLAINT with Jury Demand against Tayor-Made/Adidas, filed by Triple Tee Golf, Inc.. (Attachments: # 1 Exhibit "A", # 2 Exhibit "B") (Daghighian, Sepehr) (jao). (Entered: 09/15/2014)
09/19/2014	32	ORDER LIFTING STAY Pending Reexamination of the Patents-in-Suit. Signed by Judge Janis L. Sammartino on 9/19/2014.(All non-registered users served via U.S. Mail Service)(jao) (Entered: 09/19/2014)
09/26/2014	33	ANSWER to 31 Amended Complaint , COUNTERCLAIM against Triple Tee Golf, Inc. by Tayor-Made/Adidas.(Clark, Gary) Modified on 9/29/2014-QC mailer sent re Dellisanti's s/ signature (aef). (Entered: 09/26/2014)
10/06/2014	34	ANSWER to 33 Answer to Amended Complaint, Counterclaim by Triple Tee Golf, Inc.(a Florida Corporation).(Daghighian, Sepehr) (jao). (Entered: 10/06/2014)
10/07/2014	35	NOTICE AND ORDER for Early Neutral Evaluation Conference. Early Neutral Evaluation set for 11/19/2014 02:00 PM in Courtroom 2A before Magistrate Judge William V. Gallo. Signed by Magistrate Judge William V. Gallo on 10/7/2014.(All non-registered users served via U.S. Mail Service)(jao) (Entered: 10/07/2014)
10/20/2014	36	NOTICE OF FILING OF OFFICIAL TRANSCRIPT of Proceedings (Status Hearing) held on 8/28/2014, before Judge Janis L. Sammartino. Court Reporter/Transcriber: Gayle Wakefield. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER or the Court Reporter/Transcriber. If redaction is necessary, parties have seven calendar days from the file date of the Transcript to E-File the Notice of Intent to Request Redaction. The following deadlines would also apply if requesting redaction: Redaction Request Statement due to Court Reporter/Transcriber 11/10/2014. Redacted Transcript Deadline set for 11/20/2014. Release of Transcript Restriction set for 1/20/2015. (All non-registered users served via U.S. Mail Service. Notice of electronic filing only.) (akr) (Entered: 10/20/2014)

10/24/2014	37	Joint MOTION to Continue <i>Early Neutral Evaluation and Case Management Conference</i> by Tayor-Made/Adidas(a Delaware Corporation). (Clark, Gary) (jao). (Entered: 10/24/2014)
10/28/2014	38	ORDER Granting 37 Joint Motion to Continue ENE and Case Management Conference. For good cause shown, the Court hereby grants the parties' Joint Motion to Continue the ENE/CMC. The ENE/CMC set for November 19, 2014, at 2:00 p.m., is hereby vacated. Defendant/Counter Claimant, Taylor-Made/Adidas shall contact this Court within two business days of receiving a ruling by Judge Sammartino on Defendant's MSJ. Signed by Magistrate Judge William V. Gallo on 10/28/2014. (All non-registered users served via U.S. Mail Service)(jao) (Entered: 10/28/2014)
11/03/2014	39	Mail Returned as Undeliverable re 36 Transcript. Mail sent to Melvin K. Silverman. (akr) (Entered: 11/04/2014)
11/12/2014	40	MOTION for Summary Judgment by Tayor-Made/Adidas(a Delaware Corporation). (Attachments: # 1 Memo of Points and Authorities, # 2 Declaration Of Gary A. Clark, # 3 Declaration Of Todd Beach, # 4 Statement of Facts, # 5 Proof of Service)(Clark, Gary) (jao). (Entered: 11/12/2014)
11/18/2014	41	Joint MOTION Re Request For Briefing Schedule For Taylor Made's Motion For Summary Judgment re 40 MOTION for Summary Judgment by Tayor-Made/Adidas(a Delaware Corporation). (Clark, Gary) (jao). (Entered: 11/18/2014)
11/25/2014	42	ORDER Granting 41 Joint Motion Re Request For Briefing Schedule. A hearing on the Motion for Summary Judgment is presently scheduled for February 19, 2015, at 1:30 p.m. Plaintiff SHALL FILE a response in opposition on or before January 15, 2015. Defendant SHALL FILE a reply, if any, on or before January 26, 2015. Signed by Judge Janis L. Sammartino on 11/25/2014. (jao) (Entered: 11/25/2014)
01/15/2015	43	RESPONSE in Opposition re 40 MOTION for Summary Judgment filed by Triple Tee Golf, Inc.. (Attachments: # 1 Exhibit Exhibit to Triple Tee's Memo of Points and Authorities in Opp to Def. MFSJ, # 2 Declaration Declaration of Gillig, J.P.in Support of Memorandum, # 3 Exhibit Exhibits Re Gillig Declaration in Support of Memorandum)(Silverman, Melvin) (jao). (Entered: 01/15/2015)
01/26/2015	44	REPLY to Response to Motion re 40 MOTION for Summary Judgment filed by Tayor-Made/Adidas(a Delaware Corporation). (Clark, Gary) (jao). (Entered: 01/26/2015)
01/26/2015	45	REPLY - Other re 40 MOTION for Summary Judgment <i>Corrected Separate Statement Of Material Facts</i> filed by Tayor-Made/Adidas(a Delaware Corporation). (Clark, Gary) (jao). (Entered: 01/26/2015)
02/19/2015	46	Minute Order for proceedings held before Judge Janis L. Sammartino : Hearing on Motion for Summary Judgment 40 held and taken under submission; Court to issue written order (Court Reporter/ECR Gayle Wakefield / Plaintiff Attorney Melvin Kenneth Silverman / Defendant Attorney Gary A. Clark & Bridgette Agness) (no document attached) (acr) (Entered: 02/20/2015)

03/23/2015	47	ORDER Granting 40 Defendant's Motion for Summary Judgment. The Court finds that Defendant is entitled to judgment as a matter of law, and grants Defendant's MSJ. The Clerk of the Court shall close the file. Signed by Judge Janis L. Sammartino on 3/23/2015. (jao) (Entered: 03/23/2015)
03/23/2015	48	CLERK'S JUDGMENT. IT IS SO ORDERED AND ADJUDGED that having considered the parties arguments and the law, the Court grants Defendant's Motion for Summary Judgment. Defendant is entitled to judgment as a matter of law.(jao) (Entered: 03/23/2015)
04/15/2015	49	NOTICE OF APPEAL to the Federal Circuit as to 48 Clerk's Judgment, 47 Order Granting Defendant's Motion for Summary Judgment, by Triple Tee Golf, Inc. (Filing fee \$ 505 receipt number 0974-7986751.) (Silverman, Melvin). (Modified on 4/15/2015 to add links to Judgment and Order. Notice of Appeal electronically transmitted to the US Court of Appeals for the Federal Circuit.) (akr). (Entered: 04/15/2015)
04/17/2015	50	USCA Case Number 15-1564 for 49 Notice of Appeal to Federal Circuit, filed by Triple Tee Golf, Inc. (akr) (Entered: 04/17/2015)
04/28/2015	51	REPORT of Patent and Trademark Closing, regarding patent and/or trademark number(s) 7,128,660, 7,854,667, re 48 Clerk's Judgment. cc:USPTO (ag) (Entered: 04/28/2015)

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US007128660B2

(12) **United States Patent**
Gillig

(10) **Patent No.:** **US 7,128,660 B2**
(45) **Date of Patent:** **Oct. 31, 2006**

(54) **METHOD OF GOLF CLUB PERFORMANCE
ENHANCEMENT AND ARTICLES
RESULTANT THEREFROM**

(75) Inventor: **John P. Gillig**, Pompano Beach, FL
(US)

(73) Assignee: **Elizabeth P. Gillig Revocable Trust**,
Duxbury, MA (US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(h) by 0 days.

(21) Appl. No.: **10/818,899**

(22) Filed: **Apr. 3, 2004**

(65) **Prior Publication Data**
US 2004/0192466 A1 Sep. 30, 2004

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/383,532,
filed on Mar. 10, 2003, now abandoned, which is a
continuation-in-part of application No. 09/849,522,
filed on May 7, 2001, now Pat. No. 6,530,848.

(60) Provisional application No. 60/205,250, filed on May
19, 2000.

(51) **Int. Cl.**
A63B 53/00 (2006.01)
A63B 53/04 (2006.01)

(52) **U.S. Cl.** **473/324**; 473/409; 473/334;
473/340; 473/345

(58) **Field of Classification Search** 473/324-350,
473/290-291, 409
See application file for complete search history.

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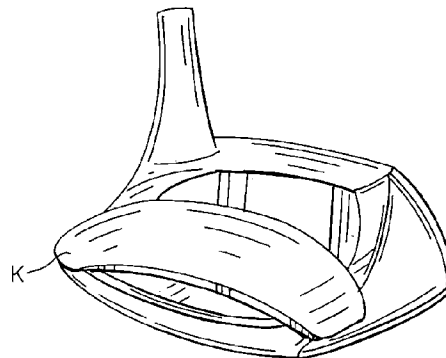
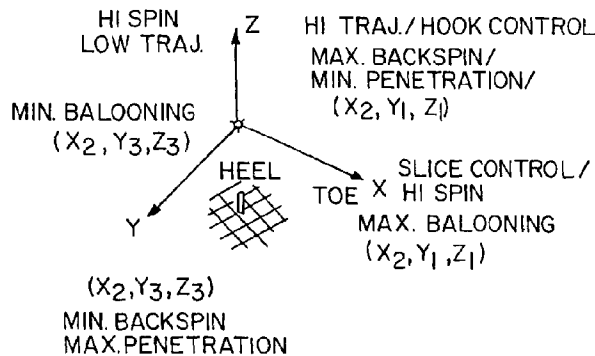
Primary Examiner—Sebastiano Passaniti

(74) *Attorney, Agent, or Firm*—Melvin K. Silverman; Yi Li

(57) **ABSTRACT**

The performance of a golf club may be enhanced through the
provision of a void space behind a face plate and above the
sole plate, to decrease club weight and provide single or
combinations of selectable weighting elements within volu-
metric coordinates of an orthonormal matrix about the void
space. The weighting coordinates are provided in response
to ball strike, flight analysis and physiologic observation of
the golf strike swing. Ball backspin, trajectory, penetration
and hook or slice may be modified through the use of a
definable weighting strategy.

19 Claims, 11 Drawing Sheets



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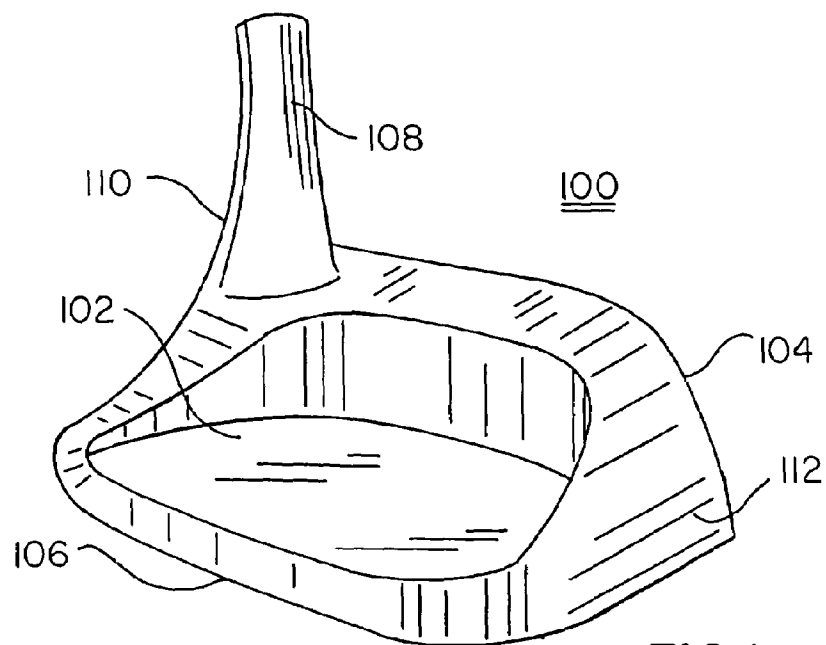


FIG. 1

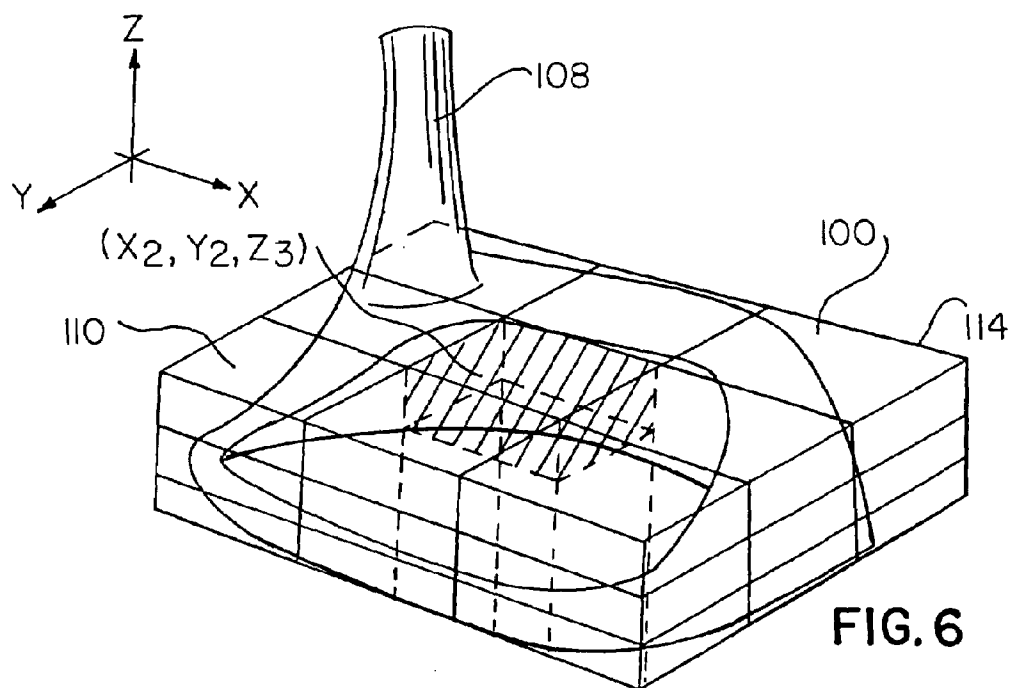


FIG. 6

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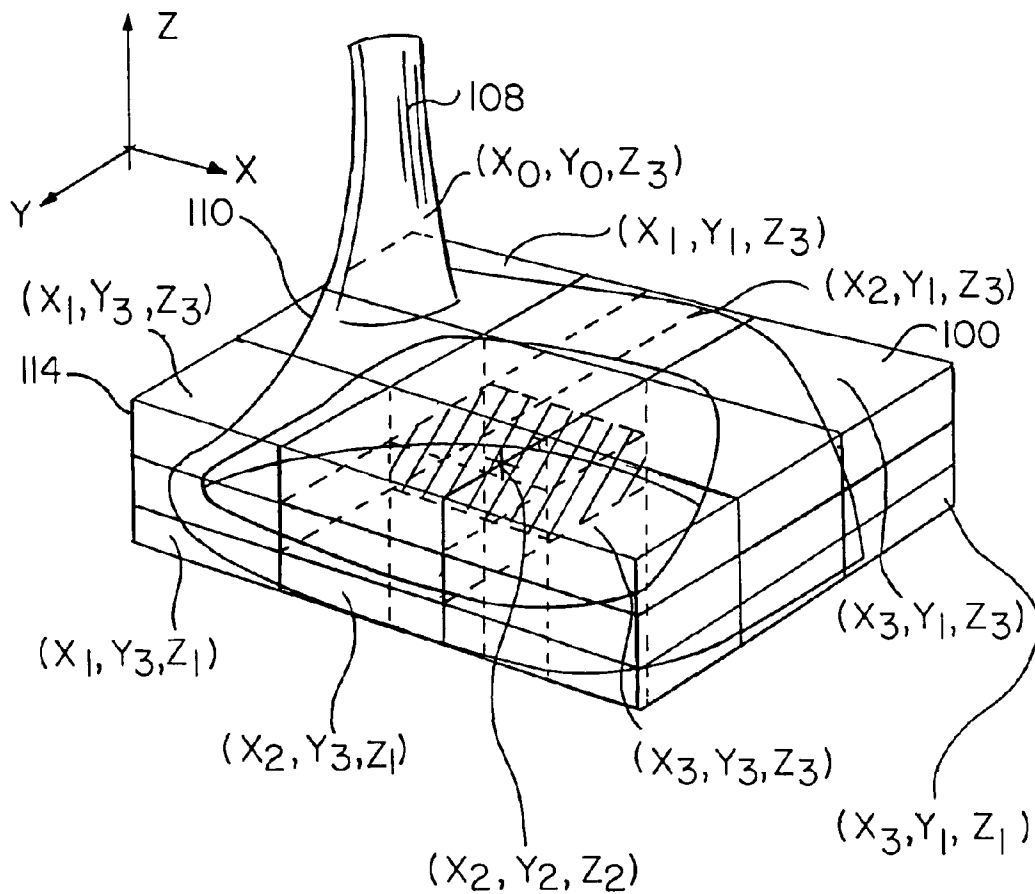


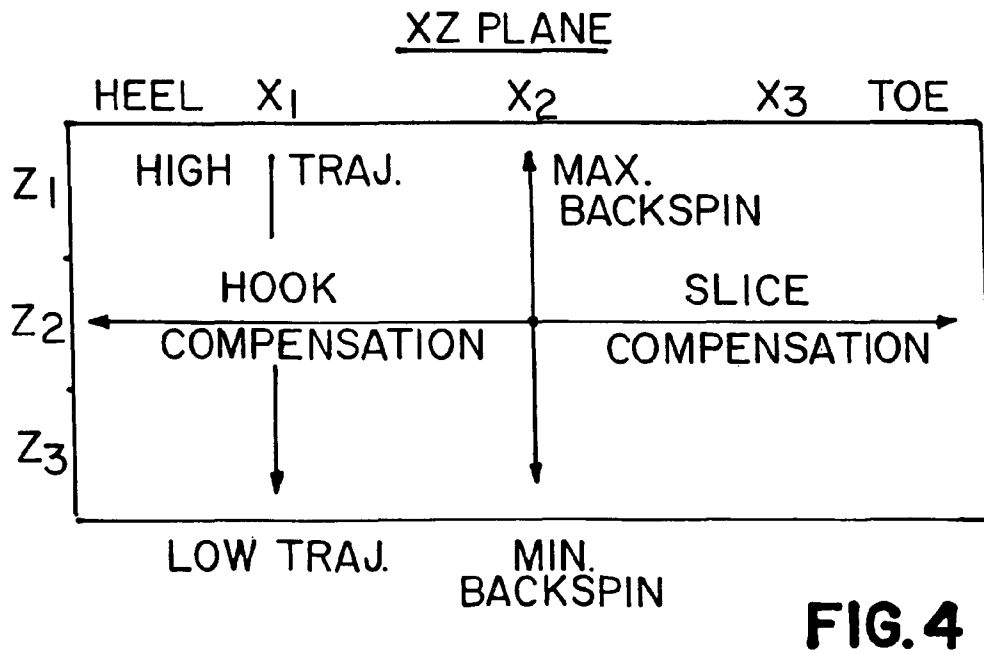
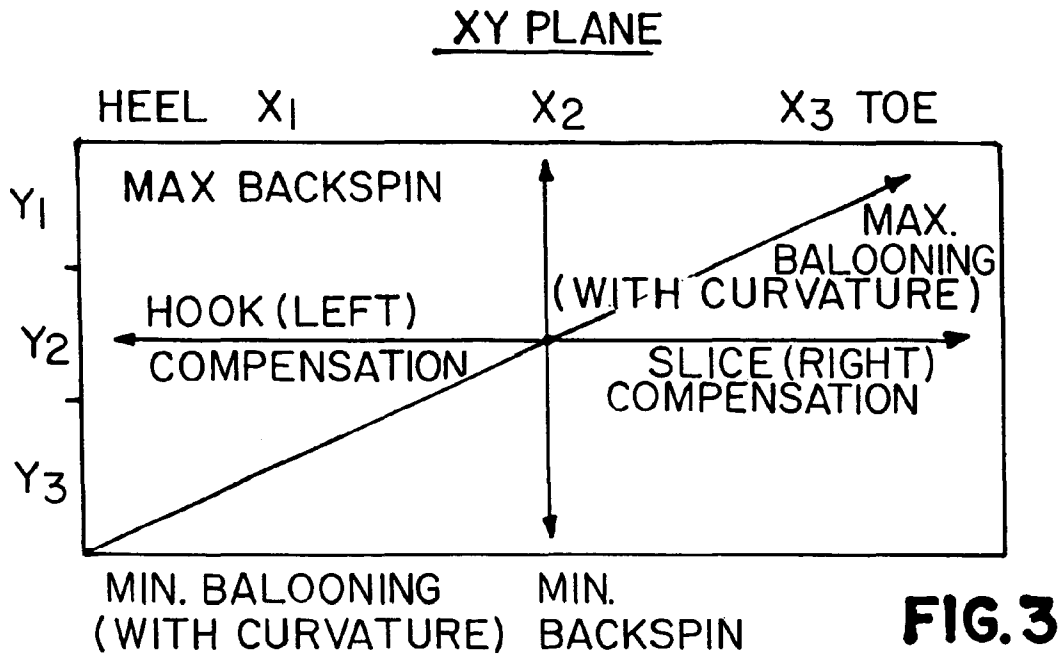
FIG. 2

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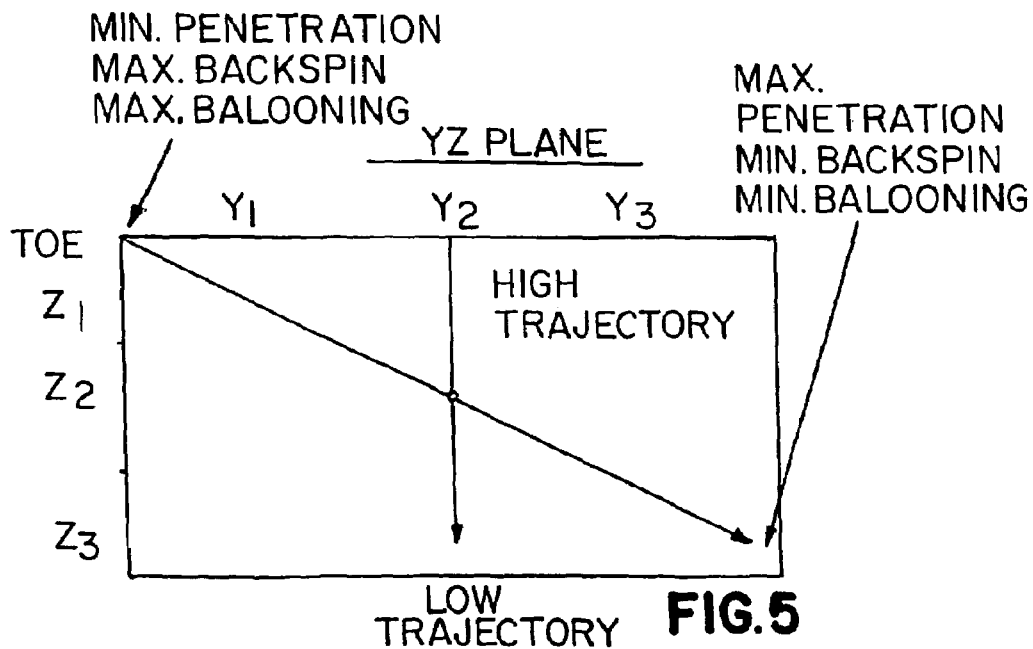
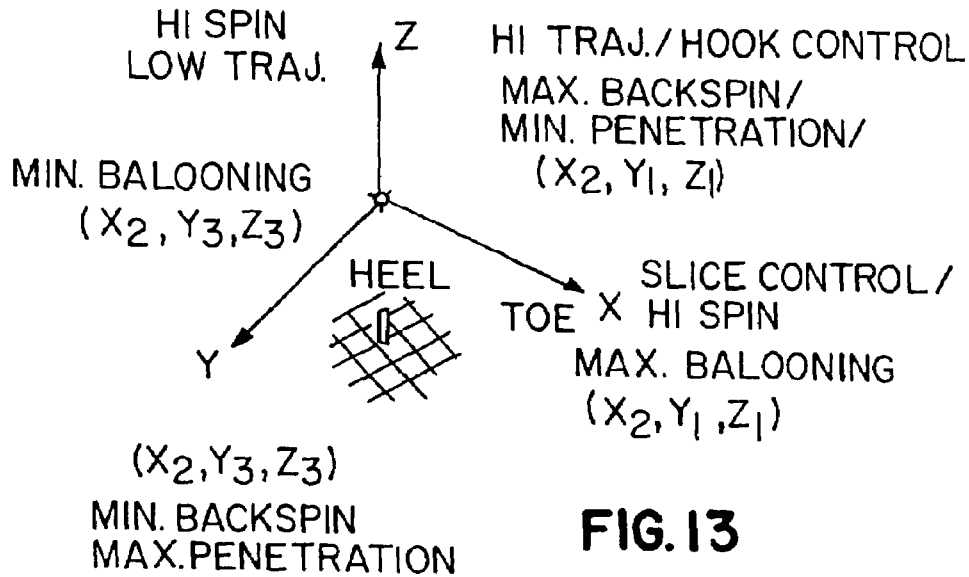


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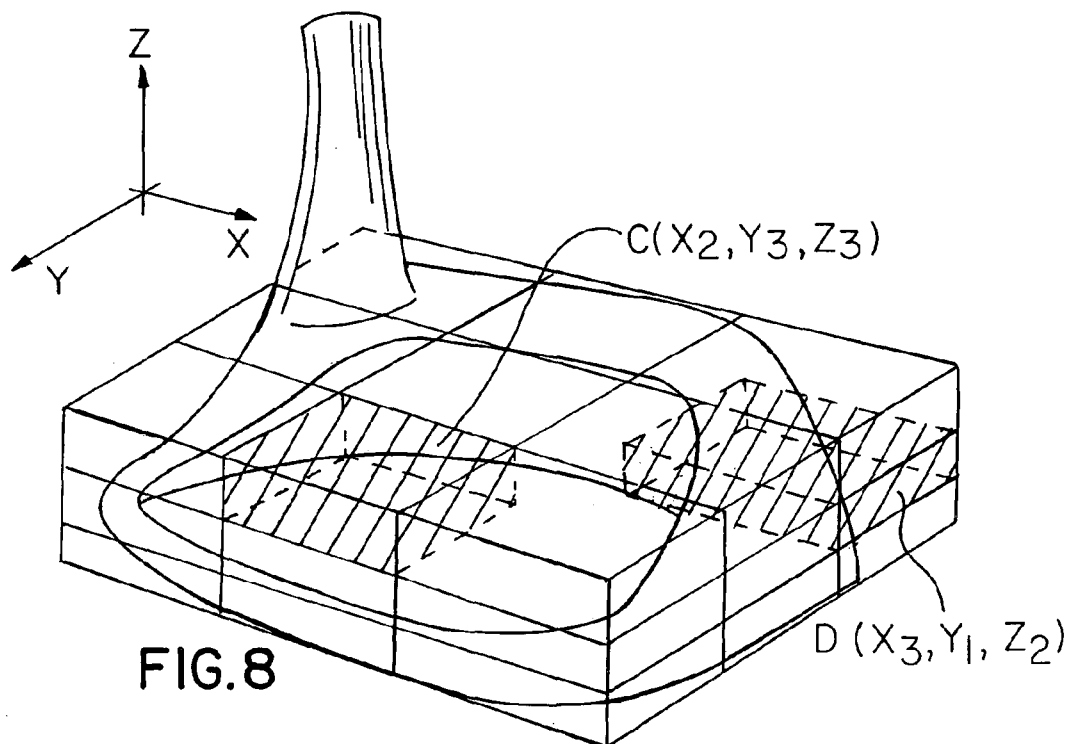
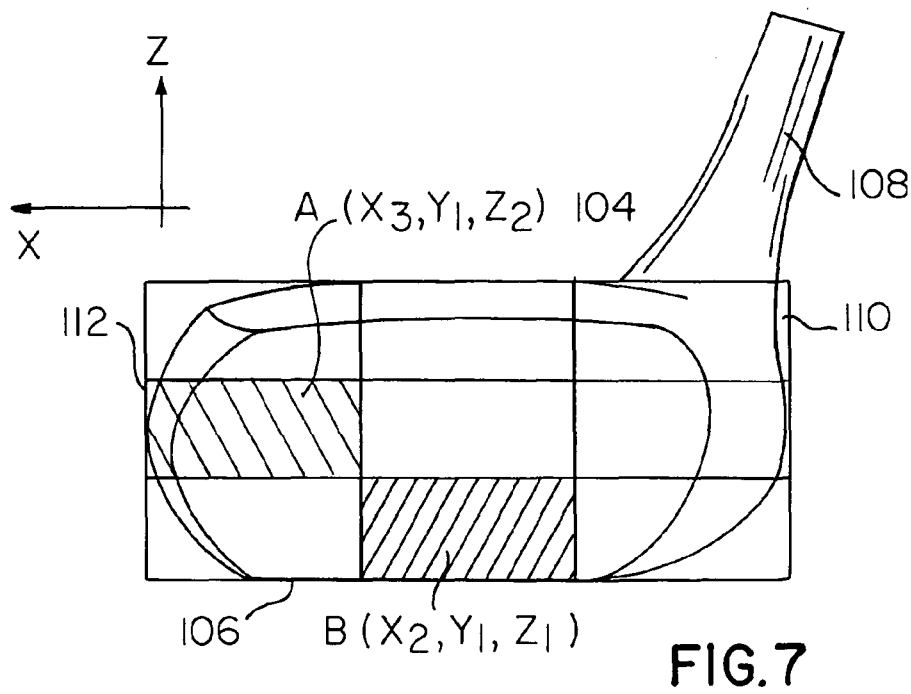


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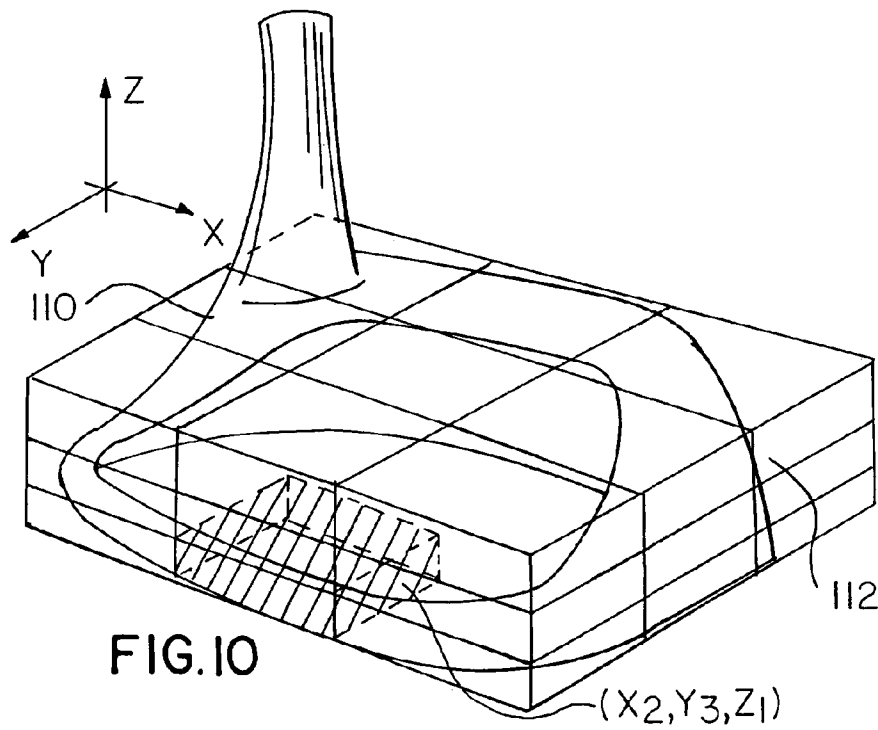
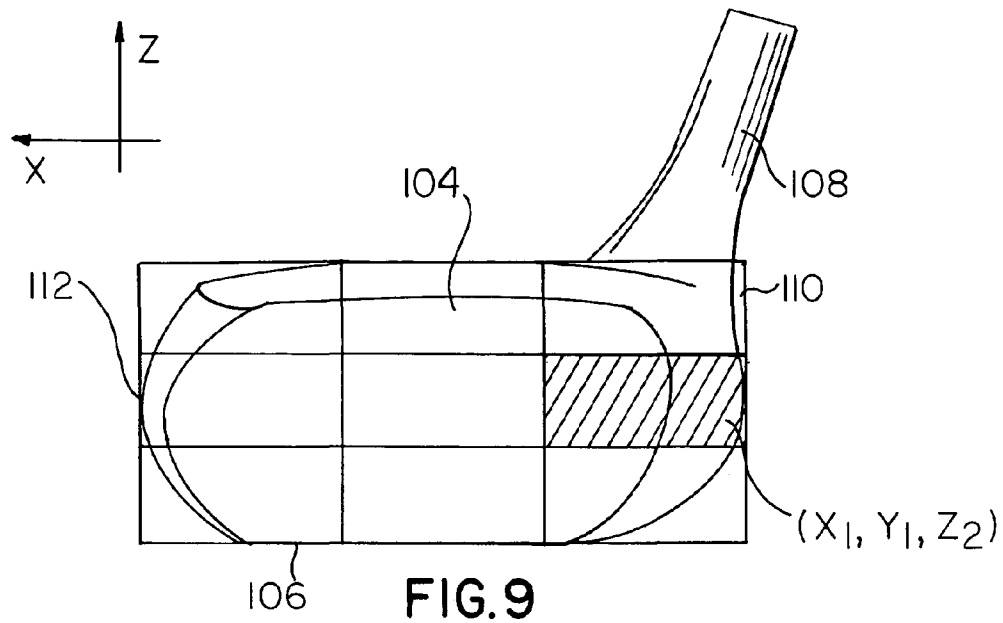


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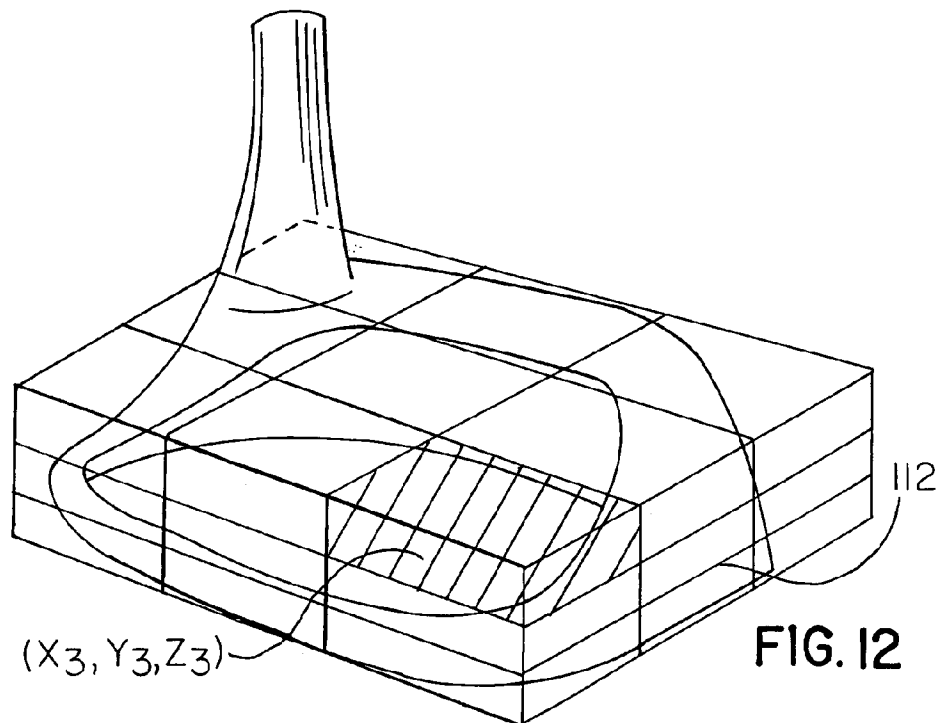
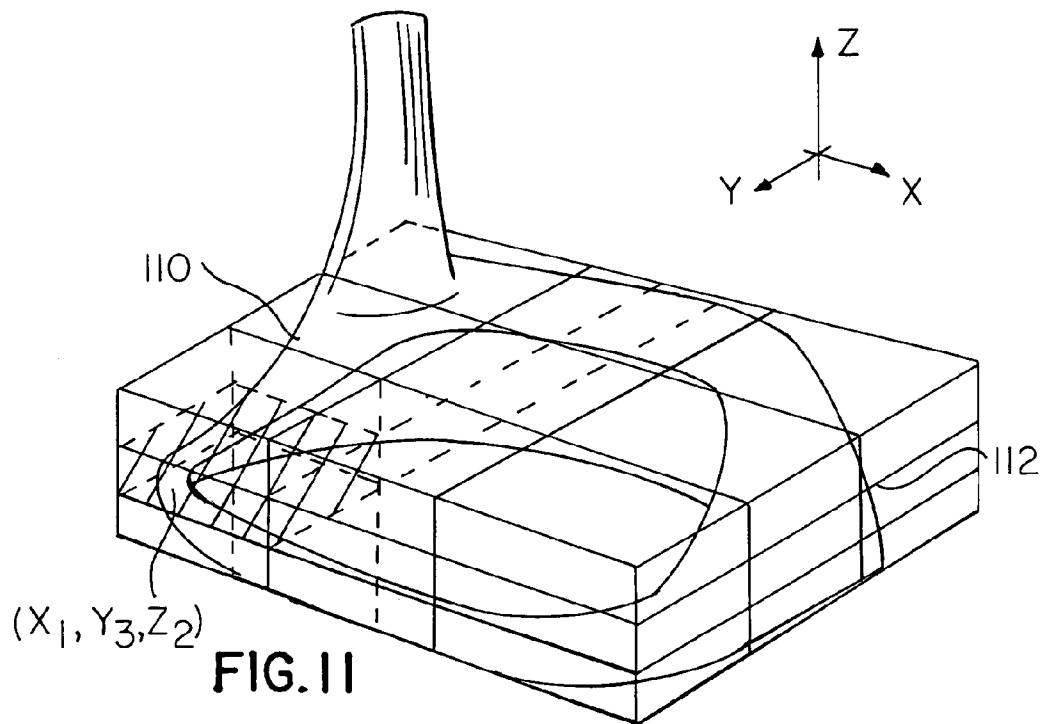


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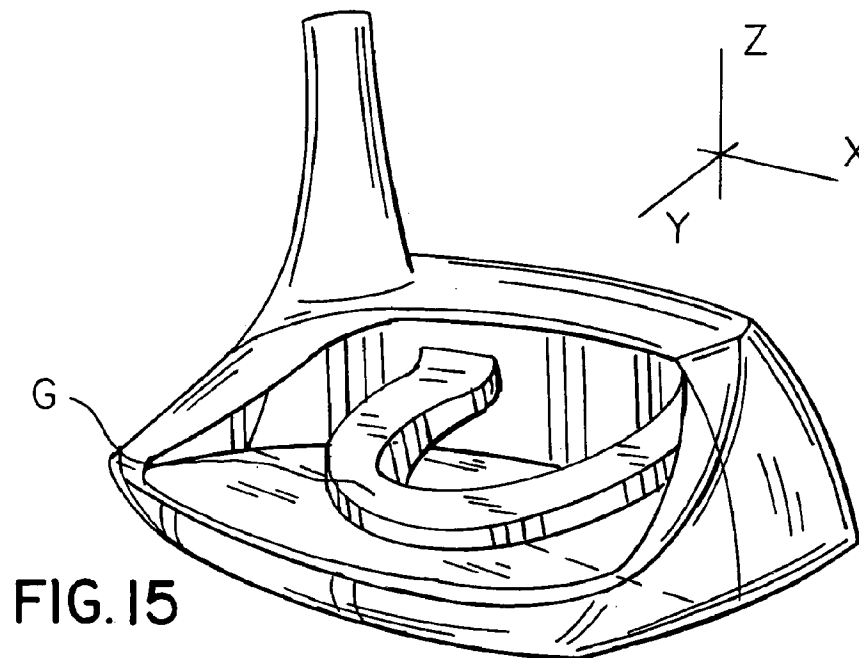
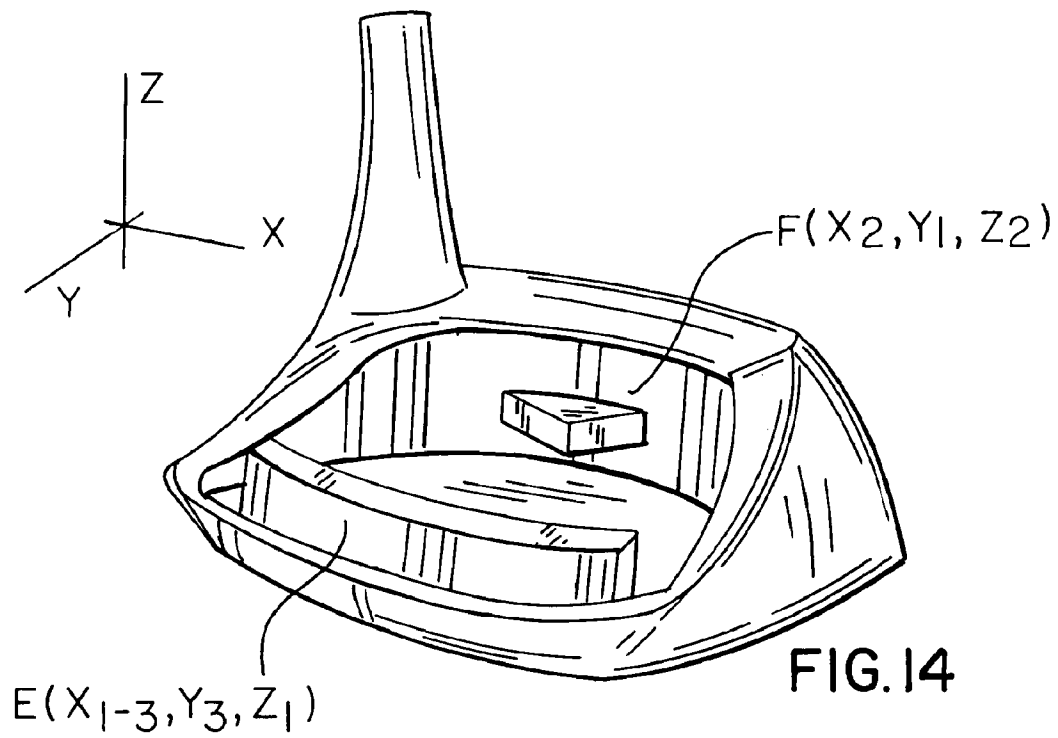


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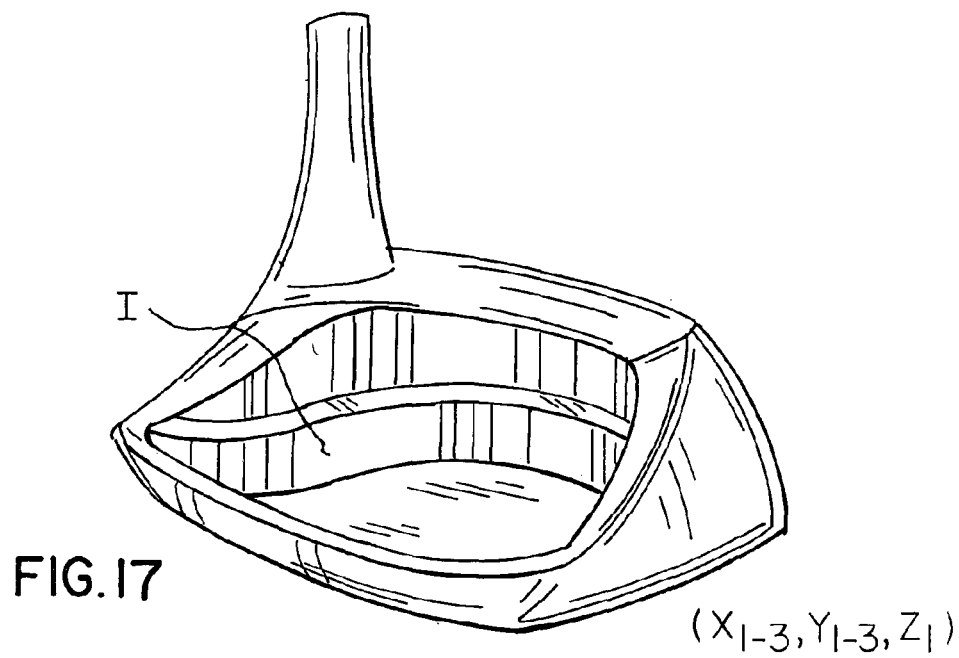
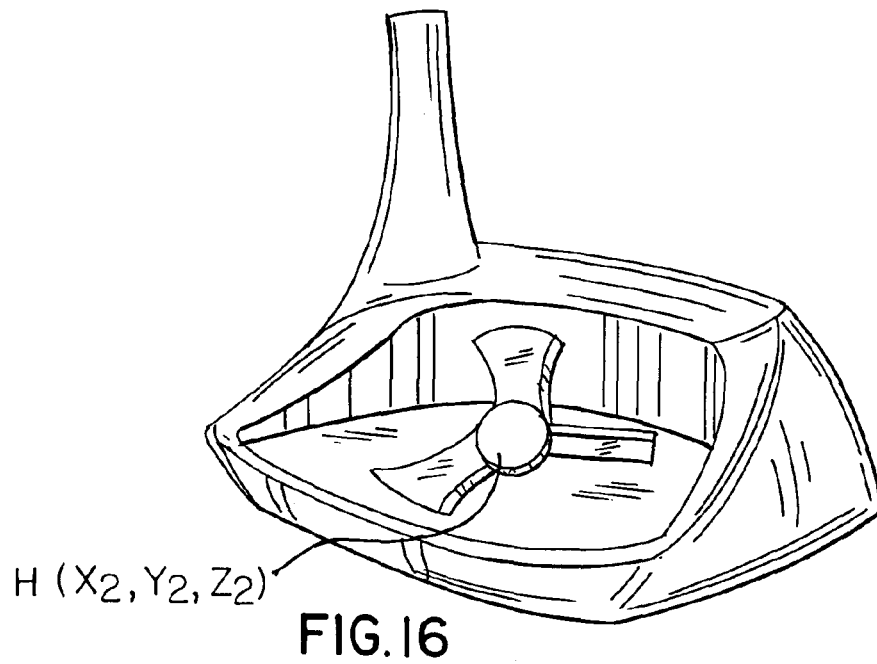


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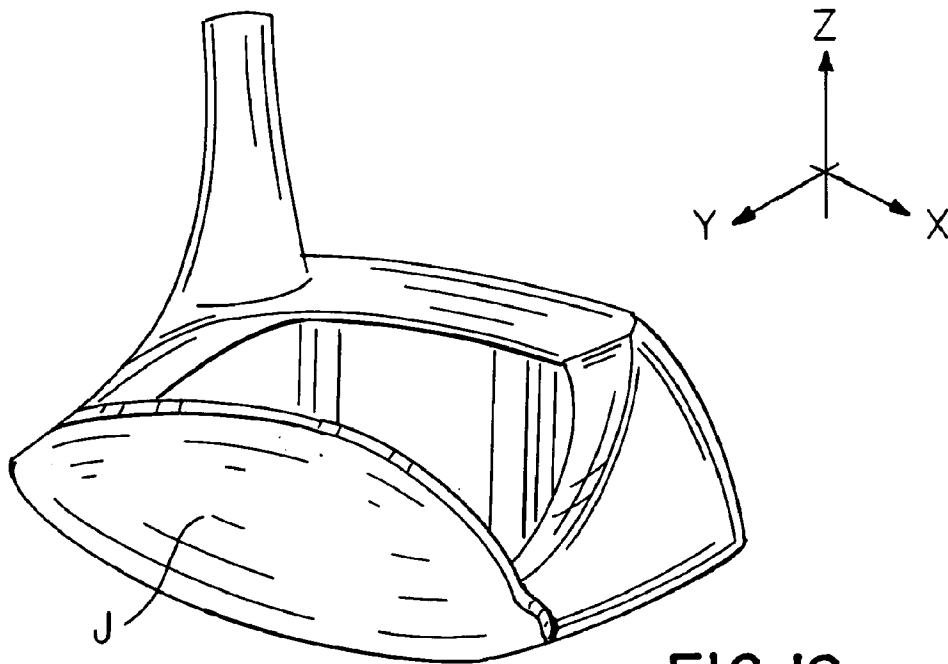


FIG. 18

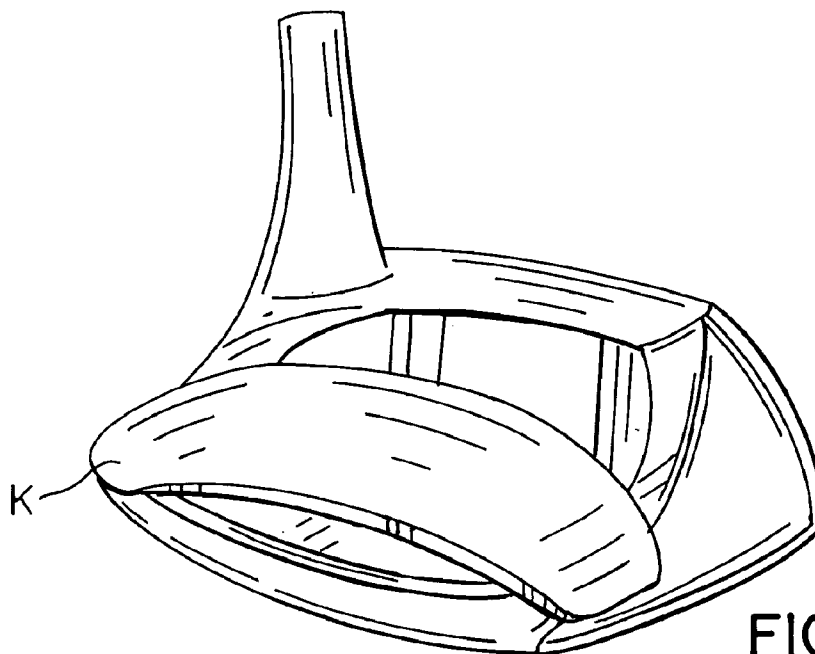


FIG. 19

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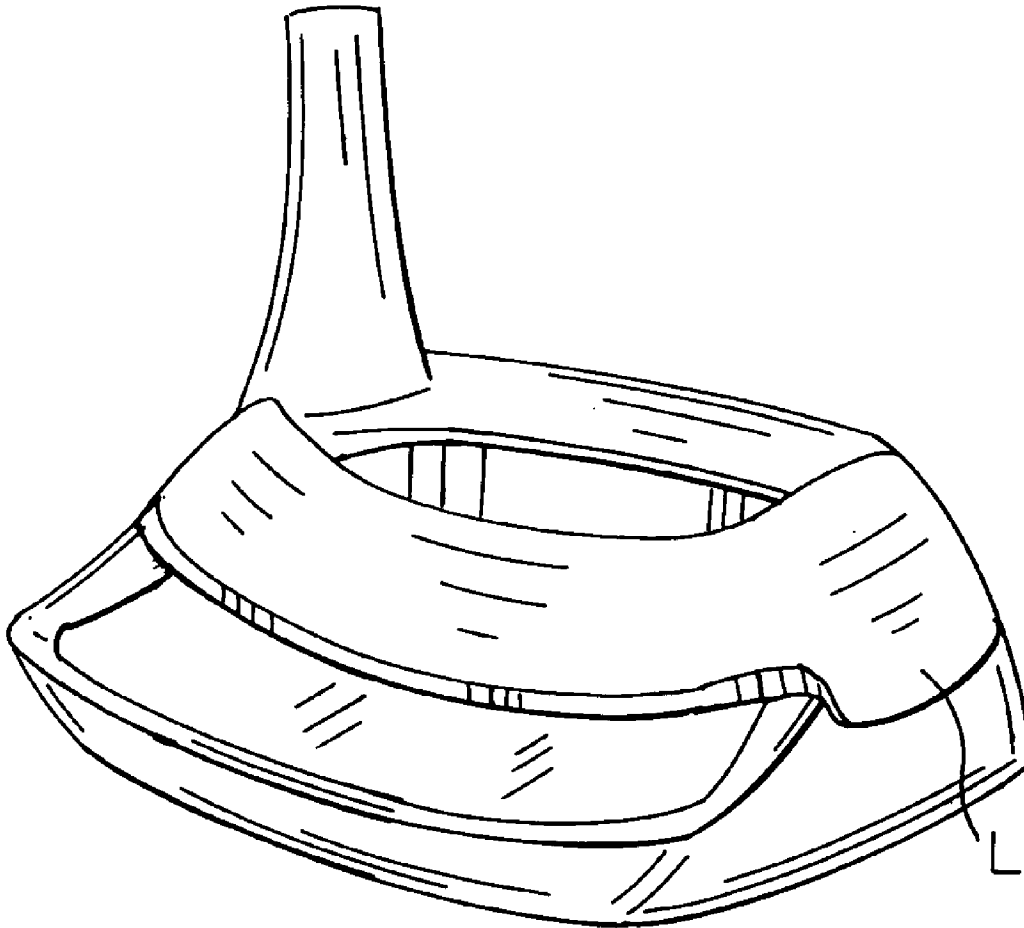


FIG. 20

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METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM

REFERENCE TO RELATED APPLICATIONS

This is a continuation-in-part of application Ser. No. 10/383,532, entitled Multi-purpose Golf Club, filed Mar. 10, 2003, now abandoned and the same is incorporated herein by reference, which is a continuation-in-part of application Ser. No. 09/849,522, now U.S. Pat. No. 6,530,848, which is a utility conversion of Provisional Patent application No. 60/205/250, filed May 19, 2000. Each of said applications are incorporated by reference herein.

BACKGROUND OF THE INVENTION

A. Area of Invention

The invention relates to a method of selectably varying the center of gravity and distribution of weighting in a void space in the head of a golf club.

B. Prior Art

Golfing enthusiasts appreciate the dynamic characteristics of golf irons and woods and the manner in which performance of the same will vary as a consequence of physiologic characteristics of a particular golfer. Such physiologic factors will affect a variety of ball strike parameters including, without limitation, loft trajectory, inertial spin, range hook and slice.

My issued U.S. Pat. No. 6,530,848 (2003) sets forth the use of weighting options for the center of gravity ("CG") of a club resultant from a substantial hollowing out of or void space in a top or predominant portion of the club head, as a manufacturing step. Said void space teaches the significance of placement of the position of a weight within such hollowed-out portion to effect a variety of ball strike and flight characteristics including increase or decrease of clockwise spin, counterclockwise spin and back spin of the ball so propelled by the golf club. Said patent further sets forth the variability of a weight element to adjust the weight of the golf club to induce a more desirable ball spin to thereby accomplish an improved trajectory of ball flight.

Use of a cavity within the upper surface of a putter type golf club in to vary the weight or balance of the heel, toe and bottom portions of a putter club head, and certain uses of weights therein, is recognized in U.S. Pat. No. 5,683,307 (1997) to Rife, entitled Putter Type Golf Club Head with Balance Weight Configuration and Complementary Ball Striking Face. U.S. Pat. No. 3,841,640 (1974) to Gaulocher, entitled Golf Putter, reflects a rudimentary recognition of the importance of proper weighting within the head of a golf putter to compensate for physiologic needs and preferences of a golfer. Such approaches in the prior art have attempted to address one or another problem associated with the golf strike characteristics or, in some cases, the characteristics of the golf range surface. As is well known, golfing greens are replete with imperfections which affect ball speed, spin and roll. Accordingly, a wide range of both ball flight and ground surface performance factors can be attributed to weight distribution and position of the CG within the club head.

U.S. Pat. No. 4,909,029 (1990) to Sinclair employs an upper void space to modify the aerodynamics of the head of the golf ball.

The present inventive method reflects my discovery that many more options for positioning of the CG and distribution of weight or weights within the head of a golf club, whether that club comprises an iron, a wood, or a hybrid

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thereof, in positioning, behind the club face, selectable high density weighting elements at coordinates of an orthonormal matrix up to 27 potential locations in a void space, to thus compensate for physiologic imperfections in one or more characteristic of the swing of a golfer. The angulation and curvature of the club face relative to said matrix provides a yet further performance enhancing parameter that co-acts with weight elements within said matrix.

Published U.S. Specification US 2003/0199331A1 teaches use of a re-positionable weight chip in a golf club to modify club performance.

SUMMARY OF THE INVENTION

The performance of golf club heads made of wood, plastic, metal, and composites thereof may be enhanced through the provision of a void space behind a face plate and above the sole portion, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix within said void space. Said coordinates are provided as a function of ball strike, flight analysis and physiologic or computerized observation of the golf strike swing. In a basic embodiment, ball flight may be affected by varying the mass of a selectable sole portion which may be uniformly or variably weighted from the club hosel to toe end. Weight of uniform or non-uniform distribution may also selectably be provided within the void space behind the face plate and above the fixed sole portion. The angle and curvature of the face plate may also be varied.

The inventive method more particularly comprises a method of golf club performance enhancement, the method comprising the steps of (a) provision of a void space behind a face plate of said club and above a sole portion thereof; and (b) in a virtual X, Y, Z orthonormal coordinate system in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion, the steps of selectably employing at least two of the following club weighting strategies: (i) to modify backspin, providing within said void space, weighting means at a low Y, low Z coordinate to increase backspin or at a high Y, high Z coordinate to decrease backspin; (ii) to modify ball penetration, providing within said void space weighting means at a high Y, high Z coordinate to maximize penetration or at a low Y, low Z coordinate to minimize penetration; (iii) to modify ball trajectory, modifying weighting means within said void space at a low Z-coordinate to increase trajectory or at a high z-coordinate to decrease trajectory; and (iv) to compensate for bait hook or slice, providing weighting means within said void space at a low X-coordinate to compensate for hook or a high X-coordinate to compensate for slice.

It is accordingly an object of the invention to provide a golf club having a weight modifiable club head, inclusive of interchangeable sole plates and/or weighting elements, which express a universal method of golf club head modification to account for ball backspin, penetration, trajectory, and hook or slice.

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It is another object to provide a wooden, plastic or metal golf club having a head with a hollowed out portion behind the face plate and above a uniform or non-uniform sole plate.

It is a further object of the invention to provide a golf club head with a hollowed-out void space, made during production, to a golfer's preference, and further providing a modifiable sole plate, with or without addition integral or added weights selectable positioned in volumetric coordinates of a virtual matrix about said void space.

It is a further object to provide a club head, modified with a hollow interior and having selectable point, axis, vector distributed linear or non-linear weights which may be inserted or removed to suit particular preferences, needs and physiologic requirements of a golfer.

It is a yet further object of the invention to provide improved elements and arrangements thru a method of providing an inexpensive, durable and effective means of compensating for ball spin, ball flight trajectory, ball spin and golf course surface variables.

The above and yet other objects and advantages of the present invention will become apparent from the hereinafter set forth Brief Description of the Drawings, Detailed Description of the Invention, and Claims appended herewith.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the head of a golf club configured for the practice of the present inventive method and products thereof.

FIG. 2 is an illustration of a virtual three-dimensional orthonormal matrix by which the inventive method may be practiced.

FIG. 3 is a graph-type illustration a golf club performance parameters which may be effected by weighting within the xy plane of said orthonormal matrix.

FIG. 4 is a graph showing the golf performance parameters which may be influenced by weighting within the xz plane of said matrix.

FIG. 5 is a graph showing the club performance characteristics which may be influenced by weighting within the yz plane of said matrix.

FIG. 6 is an illustration of a weighting of a club head of the type of FIG. 1 at a (X2, Y2, Z3) coordinate of said matrix.

FIG. 7 is a front plan view of the club of FIG. 1 showing weighting at x3, Y1, Z2 coordinate and at a (X2, Y1, Z1) coordinate.

FIG. 8 is a view, similar to that of FIG. 6, however showing weighting of the club of FIG. 1 at a (X2, Y3, X3) coordinate and at the (X3, Y1, Z2) coordinate.

FIG. 9 is a view, similar to that of FIG. 7, however showing weighting at a (X1, Y1, Z1) coordinate.

FIG. 10 is a view, similar to that of FIG. 6, however showing weighting at a (X2, Y3, Z1) position.

FIG. 11 is a view similar to that of FIG. 6, however showing weighting at a (X1, Y3, Z2) coordinate.

FIG. 12 is a view, similar to that of FIG. 6, however showing weighting of the club head at a (X3, Y3, Z3) coordinate of the orthonormal matrix.

FIG. 13 is a three-dimensional graph showing the effect of weighting at different combinations of the X, Y, and Z coordinates of the orthonormal matrix and the parametric results of such weighting.

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FIG. 14 is a view of a club head of the type of FIG. 1, however showing the use of multiple weights across multiple coordinates.

FIG. 15 is a view, the use of a horse shoe weighting element to broaden the sweet spot and to achieve other modifications of ball flight performance.

FIG. 16 is a view showing the use of a propeller type weighting element to modify golf club performance.

FIG. 17 is a view in which a strip-like element is used to modify club performance.

FIG. 18 illustrates the use of a clip-on element to achieve particular modifications of golf strike and ball flight characteristics.

FIG. 19 shows a further snap-on element to provide different performance characteristics.

FIG. 20 shows a yet further snap-on weighting element for the modification of ball strike characteristics.

DETAILED DESCRIPTION OF THE INVENTION

With reference to the perspective view of FIG. 1, there is shown a golf club head 100 modified from the shape of more conventional golf club heads through the provision of a void space 102 behind a face plate 104 above a sole plate portion 106 of the club head 100. Also shown in FIG. 1 is a golf club hosel 108 which enters the club head at a heel 110 of the club. Located oppositely to heel 110 is club toe 112.

In FIG. 2 is shown an orthonormal matrix 114 which surrounds the club 100, and is defined by an X, Y and Z coordinate system corresponding to the three essential axes of the club, shown to the upper left of FIG. 2. Said X, Y and Z axes of said orthonormal matrix 114 provide for a 3x3x3 system of 27 volumetric coordinates. Therein, the position (X₀, Y₀, and Z₃) defines the location at which hosel 108 enters club head 100. The (X₂, Y₂, Z₂) position, shown in shading in FIG. 2, represent the center of gravity of the club and is consistent with a normal or standard flight of the golf ball. In other words, a golfer having a perfect golf swing would, in accordance with the present system, apply a weighting element to a club head, of the type of club head 100, at position (X₂, Y₂, Z₂) of the matrix shown therein. For ease of reference in the figures which follow, applicable coordinate nomenclature for various positions

In the charts of FIGS. 3-5 are shown the XY, XZ and YZ coordinate relationships which affect particular parameters of ball strike, path, trajectory and rotation which are of interest to golfers. More particularly, shown in FIG. 3 is the effect of different types of weighting within the XY plane of orthonormal matrix 112, that is, the horizontal plane thereof. Therein, weighting in the +X or toe direction will increase the loft or ballooning of flight path of the golf ball, so that +X weighting direction of the club will provide for slice (right curvature) compensation of the golf ball. Conversely, weighting toward the heel or in the -X direction will provide for hook (left curvature) compensation. FIG. 3 also indicates that maximum backspin of the ball may be achieved by weighting at a low y position, that is, at the plane of the face plate, while minimum back spin may be accomplished through weighting toward the rear of the club, this corresponding to the Y3 position.

With reference to FIG. 4, one may note that hook or slice compensation, as in FIG. 3, remains a function of the weighting along the X-axis. In the XZ plane which is a vertical plane co-parallel with club hosel 108, trajectory may be controlled as a function of position of weighting upon the z-axis, that is, the lowest z-axis position (Z1) will afford the

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highest trajectory, whereas the highest z-axis position (Z3) will produce the lowest trajectory of ball flight.

Backspin of the ball is also a function weighting along the Z-axis. As may be noted by the line at the middle of FIG. 4, the Z1 position will produce a maximum spin of the ball, while weighting at Z3 will produce a minimum backspin. Accordingly, viewing FIGS. 3 and 4 in combination, it may be appreciated that a minimum backspin may be achieved by weighting at the (X2, Y3, Z3) coordinate, while maximum backspin may be achieved by weighting at the (X2, Y1, Z1) coordinate, as will also be illustrated in the figures which follow.

With reference to FIG. 5, this chart corresponds to the YZ plane which is a vertical plane substantially parallel with toe face 110 of the club (see FIGS. 2 and 6).

From FIG. 5, it may be noted that minimum penetration, that is, maximum apex of ball flight, is achieved at the (Y1, Z1) position, while maximum penetration is achieved at the (Y3, Z3) position. Further, the highest trajectory may be seen to exist at the (Y2, Z1) position, while the lowest trajectory is achieved at the (Y2, Z3) position. Minimum backspin is achieved at (Y3, Z3) and maximum backspin at (Y1, Z1).

With the above in mind, the weighting coordinate (X2, Y2, Z3), which is shown in FIG. 6, should be appreciated as one that does not provide for either hook or slice compensation but which provides for reduced trajectory (flatter path of ball flight) and some decrease in backspin due to the Z3 part of the coordinate shown.

In FIG. 7 are shown two different weighting coordinates, both within the Y1 axis which includes the plane of face plate 104 of the club head. More particularly, a weighting element A shown to the left of FIG. 7 is the (X3, Y1, Z2) position and affords neutral ballooning, slice compensation, and some additional backspin. In distinction, weighting element B of coordinate (X2, Y1, Z1) provides for high trajectory, maximum backspin and minimum penetration.

With reference to FIG. 8, weighting element C (coordinate X2, Y3, Z3) provides for low trajectory, minimum backspin and maximum penetration, while element D of FIG. 8 provides for neutral ballooning of ball flight, slice (right curvature) compensation and medium trajectory.

With reference to the weighing element at (X1, Y1, Z2) shown in FIG. 9, such an arrangement will provide for neutral ballooning, hook compensation, slightly additional backspin and medium trajectory.

The weighting element (X2, Y3, Z1) shown in FIG. 10 affords high trajectory, high backspin and high penetration, although not as high penetration as would exist were the weighting at the (X2, Y3, Z3) position.

Shown in FIG. 11 is a weighting element at the (X2, Y3, Z2) position. Thereby, there is achieved hook compensation, high penetration and, no change in the ball's natural trajectory.

In the weighting scheme shown in FIG. 12, that is, weighting at the (X3, Y3, Z3) coordinate position, one achieves slice compensation, decreased backspin, low trajectory and maximum penetration.

Three-dimensional relationships of the above-described parameters of backspin, penetration, trajectory and ballooning are illustrated in FIG. 13. It may be appreciated that ballooning control occurs primarily as a function of the X-axis, as does hook and slice compensation, while maximum backspin occurs as a function of weighting at the (Y1, Z1) position with minimum backspin occurring with weighting at the (Y3, Z3) position. Penetration is also a function of the combined effect of two axes, that is, maximum penetra-

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tion occurring with weighting at the (Y3, Z3) position and minimum penetration occurring with weighting at the (Y1, Z1) coordinate.

In FIG. 14 is shown the use of weights E and F in two different areas of the golf club 100 of FIG. 1. Therein, a good player would move weight E to the back of the club to achieve as penetrating a shot as he could, and would also position weight F to reduce the spin, putting an additional weight in the X-axis center (X2) of the club. This makes the sweet spot smaller, that is, the player must strike the ball right in the center (X2). That is, an ideal strike which would result in a best transference of energy. However, it causes a largest margin of error. Such a golfer therefore would have to be a rather good player to move to the center of the face where he wants to hit the ball. Said weight E also maximizes penetration.

In FIG. 15 is shown the effect of a horse shoe-like structure G, symmetric about the YZ plane at the X2 position. This helps the basic or average player. Such a player moves the weight toward the heel and the toe 112 to make his sweet spot as wide as possible. Structure G also moves the weight down toward the back to get some height on the ball, and also to get more penetration to pick-up some distance. This would be a club for a basic, standard player who simply needs some help that is not interested in slice hook combination. It's just addressing trajectory and spin rate.

With reference to FIG. 16, there is shown the use of a propeller type weight H, having its center at (X2, Y2, Z2), which would be used if one were hitting the ball a bit to the left and low. To compensate for that, the weight is moved to the left, so that the ball will move to the right. To counteract the moving the weight to the left, one may place a projection of the weight H down toward the right hand corner to get the ball up into the air again, and to also move another projection to the rear for penetration and movement up in the air.

With reference to FIG. 17, there is shown the use of a saddle-like weighting element I inserted along the sides and behind the face plate. The benefits of such a weighting geometry are that the weight is set to hit the ball a little higher because the weight is low. It also tends to give it a bit more of penetration, because the weight is moved back. By also moving it to the left, one pushes the ball out to the right, tending to give a shot slightly to the right and is penetrating, but yet will have some spin on it. So it starts out low, goes right and then slows down.

The following charts relate to weighting coordinates to figures, by planes of the orthonormal matrix.

CHART 1

(xy plane)			
	X1 (heel)	X2	X3(toe)
Y ₁	FIG. 9	FIG. 7(B), 14(F)	FIG. 7(A), 8(D)
Y ₂		FIG. 2, 6, 16	
Y ₃	FIG. 11, 14(E)	FIGS. 8(C), 10, 14(E)	FIGS. 10, 14(E)

CHART 2

(xz plane)			
	X1 (heel)	X2	X3 (toe)
Z1 (heel)		FIGS. 7(B), 10, 16	
Z2	FIG. 9, 11	FIG. 2, 14(F)	FIGS. 7(A), 8(D)
Z3		FIGS. 6, 8(C)	FIG. 10

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CHART 3

(yz plane)			
Y1 (toe)		Y2	Y3
Z1	FIG. 7(B)	FIG. 16	FIG. 10, 14(E)
Z2	FIGS. 7(A), 8(D), 9	FIG. 5	FIG. 11
Z3		FIG. 6	FIG. 8(C), 12

In FIGS. 18–20 are shown the use of clip-on type weighting elements. More particularly, a weighting element J of FIG. 18 moves weight to the rear of the club, thus increasing penetration, while lowering the center of gravity of the club and increasing spin.

In a weighting element K of FIG. 19, weight is not moved back as far, and is raised-up slightly higher than that of element J. This reduces penetration with slightly reduced backspin, the result being a more controllable ball strike.

In FIG. 20, weighting element L provides an elevation of weight, thereby lowering trajectory which also widens the sweet spot, as in element G of FIG. 15. Also, if element L is asymmetric to the right of a YZ plane of symmetry thru location X2, slice compensation is also provided.

It is noted that many of the above functions of the weighting elements may be achieved thru variation in weight and dimension of sole plate 106 (see FIG. 1). For example, if a change in weight is indicated at a (X, Y, Z1) coordinate, a change in weight or weight-distribution in the sole plate will affect the parameters shown in the chart of FIG. 3. Also, as may be noted in FIG. 4, addition or reduction of weight at Z1 will affect trajectory and backspin.

While there has been shown and described the preferred embodiment of the instant invention it is to be appreciated that the invention may be embodied otherwise than is herein specifically shown and described and that, within said embodiment, certain changes may be made in the form and arrangement of the parts without departing from the underlying ideas or principles of this invention as set forth in the Claims appended herewith.

Having thus described my invention what I claim as new, useful and non-obvious and, accordingly, secure by Letters Patent of the United States is:

1. A method of enhancing performance of a golf club, the method comprising the steps of:

- (a) providing a void space behind a face plate of said club and above a sole portion thereof;
- (b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion;
- (c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:
 - (i) to modify backspin, providing within said void space weighting means between a low Y, low Z

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coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin;

(ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;

(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or

(iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice,

thereby enhancing performance of said club.

2. The method as recited in claim 1, in which said selectably club weighting strategies further include the step of:

(v) providing weighting means within said void space at a high Y, high Z coordinate to minimize said ballooning or at a low Y, low Z coordinate to maximize said ballooning.

3. The method as recited in claim 1, in which said weighting means comprises golfer-replaceable elements.

4. The method as recited in claim 2, in which said weighting means comprises golfer-replaceable elements.

5. The method as recited in claim 1, in which said weighting means comprises a weight which is non-uniform along one or more of said X, Y and Z axes.

6. The method as recited in claim 5, in which said weighting means comprises golfer-replaceable elements.

7. The method as recited in claim 5, including:

selection of Step(c)(ii) by securing a strip-like weighting element over said void space at about a (Y2 Y3, Z2) position and spanning all X positions, thereby providing modification of penetration at a medium ball trajectory; and

selection of Step (c)(iv) with regard to the x-axis to compensate for hook or slice.

8. The method of enhancing performance of a golf club as recited in claim 1, in which:

said selectably employing two club weighting strategies further comprising employing three of said strategies.

9. The method of enhancing performance of a golf club as recited in claim 1, in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

10. The method as recited in claim 1, in which a weighting means of a first selected strategy may be integral with that of a second selected strategy.

11. A method of enhancing performance of a golf club, the method comprising the steps of:

(a) providing a void space behind a face plate of said club and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and

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an increase in Z-axis value corresponds to increase in height above said sole portion;

(c) providing weighting means substantially within said void space between a high Y, high Z coordinate to minimize ballooning to a low Y, low Z coordinate to maximize said ballooning; and

(d) providing weighting means substantially within said void space between a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice.

12. The method as recited in claim **11**, further comprising the step of:

(e) selectably employing at least one of the following club weighting strategies to said club, in which a selected value of X, Y or Z does not include the value of Y used in Step (c):

(i) to modify backspin, providing within said void space, weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin; or

(ii) to modify ball penetration, providing within said void space weighting means at a high Y, high Z coordinate to maximize penetration or at a low Y, low Z coordinate to minimize penetration; or

(iii) to modify ball trajectory, providing weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory.

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13. The method as recited in claim **12**, in which any selected value of Y of Step (c) is not contiguous with any part of said face plate.

14. The method as recited in claim **12**, in which said weighting means of at least one strategy is non-uniform along one or more of said X, Y and Z axes.

15. The method as recited in claim **14**, including:

selection of Step (e)(ii) by securing a strip-like weighting element over said void space at about a (Y2-Y3, Z2) position and spanning all X positions, thereby providing modification of penetration to medium ball trajectory; and

selection of Step (d) with regard to the X-axis to compensate for hook or slice.

16. The method as recited in claim **11**, in which said weighting means comprises golfer-replaceable elements.

17. The method as recited in claim **11**, in which said weighting means of at least one strategy is non-uniform along one or more of said X, Y and Z axes.

18. The method as recited in claim **17**, in which said weighting means comprises golfer-replaceable elements.

19. The method as recited in claim **11**, in which in which a weighting means of a first selected strategy may be integral with that of a second selected strategy.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,128,660 B2
APPLICATION NO. : 10/818899
DATED : October 31, 2006
INVENTOR(S) : John P. Gillig

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On Title Page item (73) Assignee, change

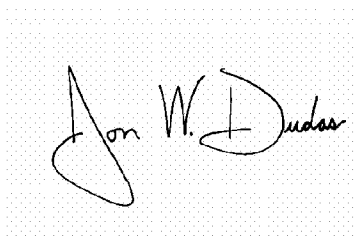
“(73) Assignee: Elizabeth P. Gillig Revocable Trust, Duxbury, MA (US)”

to

--(73) Assignee: Triple Tee Golf, Inc., Pompano Beach, FL (US)--

Signed and Sealed this

Thirty-first Day of July, 2007

A handwritten signature in black ink on a light gray dotted background. The signature reads "Jon W. Dudas" in a cursive, stylized script. The "J" is large and loops around the "on". The "W" and "D" are also stylized.

JON W. DUDAS

Director of the United States Patent and Trademark Office



US007128660C1

(12) **INTER PARTES REEXAMINATION CERTIFICATE (712th)****United States Patent**
Gillig(10) **Number:** **US 7,128,660 C1**(45) **Certificate Issued:** **Oct. 24, 2013**(54) **METHOD OF GOLF CLUB PERFORMANCE
ENHANCEMENT AND ARTICLES
RESULTANT THEREFROM**(58) **Field of Classification Search**
USPC 473/324, 409, 334, 340, 345
See application file for complete search history.(75) Inventor: **John P. Gillig**, Pompano Beach, FL (US)(56) **References Cited**(73) Assignee: **Triple Tee Golf, Inc.**, Pompano Beach,
FL (US)

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 95/002,049, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Reexamination Request:

No. 95/002,049, Jul. 20, 2012

Reexamination Certificate for:Patent No.: **7,128,660**
Issued: **Oct. 31, 2006**
Appl. No.: **10/818,899**
Filed: **Apr. 3, 2004***Primary Examiner* — Matthew C. Graham(57) **ABSTRACT**

The performance of a golf club may be enhanced through the provision of a void space behind a face plate and above the sole plate, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space. The weighting coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration and hook or slice may be modified through the use of a definable weighting strategy.

Certificate of Correction issued Jul. 31, 2007

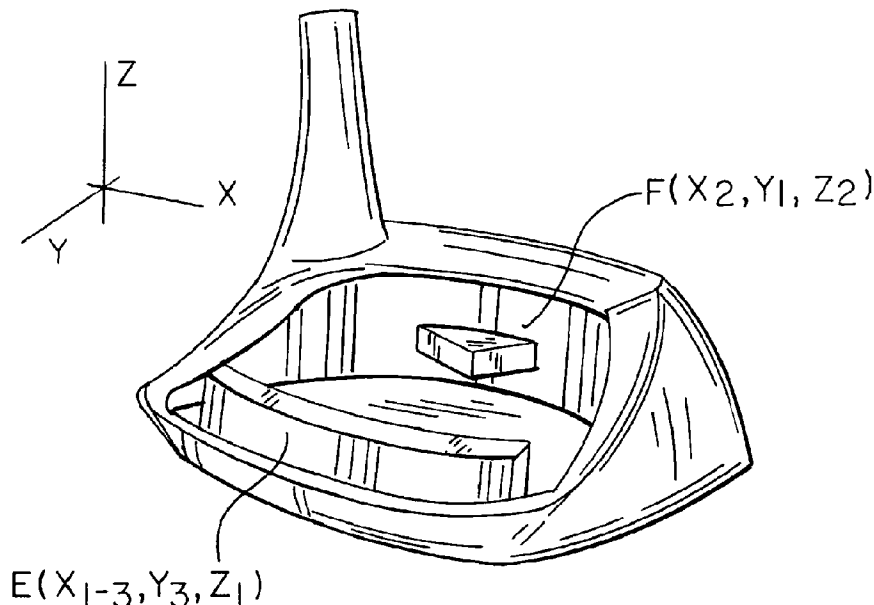
Related U.S. Application Data

(63) Continuation-in-part of application No. 10/383,532, filed on Mar. 10, 2003, now abandoned, which is a continuation-in-part of application No. 09/849,522, filed on May 7, 2001, now Pat. No. 6,530,848.

(60) Provisional application No. 60/205,250, filed on May 19, 2000.

(51) **Int. Cl.**
A63B 53/00 (2006.01)
A63B 53/04 (2006.01)(52) **U.S. Cl.**
USPC 473/324; 473/409; 473/334; 473/340;
473/345

At the time of issuance and publication of this certificate, the patent remains subject to pending reexamination control number 90/012,788 filed Feb. 6, 2013. The claim content of the patent may be subsequently revised if a reexamination certificate issues from the reexamination proceeding.



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**INTER PARTES
REEXAMINATION CERTIFICATE
ISSUED UNDER 35 U.S.C. 316**

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

**Matter enclosed in heavy brackets [] appeared in the
patent, but has been deleted and is no longer a part of the
patent; matter printed in italics indicates additions made
to the patent.**

ONLY THOSE PARAGRAPHS OF THE
SPECIFICATION AFFECTED BY AMENDMENT
ARE PRINTED HEREIN.

Column 3, line 11:

It is a further object to provide a club head, modified with
a hollow interior and having selectable point, axis, vector *and*
distributed linear or non-linear weights which may be
inserted or removed to suit particular preferences, needs and
physiologic requirements of a golfer.

AS A RESULT OF REEXAMINATION, IT HAS BEEN
DETERMINED THAT:

Claims **1-6, 8, 10-14** and **16-19** are cancelled.

Claims **7, 9** and **15** were not reexamined.

* * * * *



US007128660C2

(12) **EX PARTE REEXAMINATION CERTIFICATE** (10189th)
United States Patent
Gillig

(10) **Number:** **US 7,128,660 C2**(45) **Certificate Issued:** **Jun. 12, 2014**

(54) **METHOD OF GOLF CLUB PERFORMANCE
 ENHANCEMENT AND ARTICLES
 RESULTANT THEREFROM**

(75) Inventor: **John P. Gillig**, Pompano Beach, FL (US)

(73) Assignee: **Triple Tee Golf, Inc.**, Pompano Beach,
 FL (US)

(51) **Int. Cl.**
A63B 53/00 (2006.01)
A63B 53/04 (2006.01)

(52) **U.S. Cl.**
 USPC **473/324**; 473/334; 473/340; 473/345;
 473/409

(58) **Field of Classification Search**
 USPC 473/335, 345, 349
 See application file for complete search history.

Reexamination Request:

No. 90/012,788, Feb. 6, 2013

Reexamination Certificate for:

Patent No.: **7,128,660**
 Issued: **Oct. 31, 2006**
 Appl. No.: **10/818,899**
 Filed: **Apr. 3, 2004**

Reexamination Certificate C1 7,128,660 issued Oct. 24, 2013

Certificate of Correction issued Jul. 31, 2007

Related U.S. Application Data

- (63) Continuation-in-part of application No. 10/383,532, filed on Mar. 10, 2003, now abandoned, which is a continuation-in-part of application No. 09/849,522, filed on May 7, 2001, now Pat. No. 6,530,848.
- (60) Provisional application No. 60/205,250, filed on May 19, 2000.

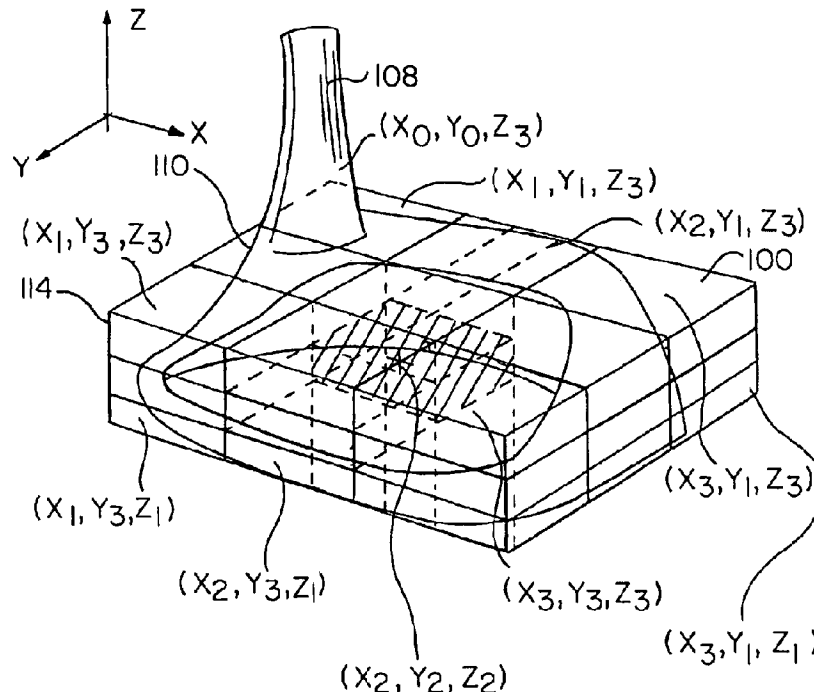
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/012,788, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Matthew C. Graham

(57) **ABSTRACT**

The performance of a golf club may be enhanced through the provision of a void space behind a face plate and above the sole plate, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space. The weighting coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration and hook or slice may be modified through the use of a definable weighting strategy.



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1

**EX PARTE
REEXAMINATION CERTIFICATE
ISSUED UNDER 35 U.S.C. 307**

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

Matter enclosed in heavy brackets [] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in *italics* indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

Claims 1-6, 8, 10-14 and 16-19 were previously cancelled.

Claims 9 and 15 are cancelled.

Claim 7 is determined to be patentable as amended.

New claims 20-22 are added and determined to be patentable.

7. The method as recited in claim [5] 20, including:

a selection [of Step(c)(ii)] by securing a strip-like weighting element over said void space at about a (Y2-Y3, Z2) position and spanning all X positions, thereby providing modification of penetration at a medium ball trajectory; and

weighting selection [of Step (c)(iv)] with regard to the X-axis to compensate for [hook] hook or slice.

20. A method of enhancing performance of a golf club head, the method comprising the steps of:

(a) providing a void space behind a face plate of the golf club head and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system including X1, X2 and X3 respective low-to-high locations upon an X-axis of said system, Y1, Y2, and Y3 respective low-to-high locations upon a Y-axis of said system, and Z1, Z2 and Z3 respective low-to-high locations of said system upon a Z-axis of said system within said head to define a 3x3x3 volumetric matrix of cells in which said sole portion is partially congruent with a bottom-most XY plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said head intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis

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value corresponds to a direction from a heel-to-toe of said head, an increase in Y-axis value corresponds in direction from a face-to-rear of said head, and an increase in Z-axis value corresponds to an increase in height above said sole portion; and

(c) selectably employing two of the following weighting strategies to said club head, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:

(i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin in which an increase in a Z-axis value does not correspond to a decrease in Y-axis value;

(ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;

(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or

(iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice,

in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

21. The method as recited in claim 20, further comprising: positioning weighting means within said matrix of said void space between a low X or X1 coordinate to compensate for hook, to an high X or X3 coordinate to compensate for slice, said strategy selectably inclusive of a neutral hook-slice effect by positioning at a X2 coordinate.

22. The method as recited in claim 20, further comprising: positioning weighting means within said matrix of said void space between a low Z or Z1 coordinate, corresponding to increased trajectory, to a high Z or Z3 coordinate corresponding to decreased trajectory, said strategy selectably inclusive of a neutral effect Z2 coordinate therebetween.

* * * * *



US007854667B2

(12) **United States Patent**
Gillig

(10) **Patent No.:** **US 7,854,667 B2**
(45) **Date of Patent:** ***Dec. 21, 2010**

(54) **METHOD OF GOLF CLUB PERFORMANCE
ENHANCEMENT AND ARTICLES
RESULTANT THEREFROM**

(75) Inventor: **John P. Gillig**, Pompano Beach, FL (US)

(73) Assignee: **Triple Tee Golf, Inc.**, Pompano Beach,
FL (US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 817 days.

This patent is subject to a terminal dis-
claimer.

(21) Appl. No.: **11/588,992**

(22) Filed: **Oct. 27, 2006**

(65) **Prior Publication Data**
US 2007/0099720 A1 May 3, 2007

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/818,899,
filed on Apr. 3, 2004, now Pat. No. 7,128,660, which is
a continuation-in-part of application No. 10/383,532,
filed on Mar. 10, 2003, now abandoned, which is a
continuation-in-part of application No. 09/849,522,
filed on May 7, 2001, now Pat. No. 6,530,848.

(60) Provisional application No. 60/205,250, filed on May
19, 2000.

(51) **Int. Cl.**
A63B 53/04 (2006.01)

(52) **U.S. Cl.** **473/334; 473/345; 473/349**

(58) **Field of Classification Search** **473/324-350,**
473/287-292

See application file for complete search history.

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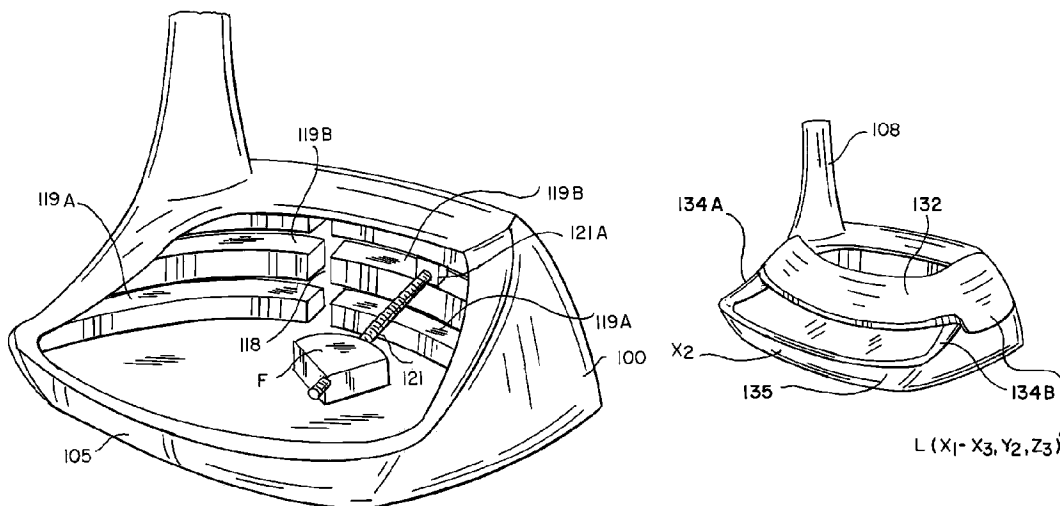
Primary Examiner—Sebastiano Passaniti

(74) *Attorney, Agent, or Firm*—Melvin K. Silverman; Yi Li

(57) **ABSTRACT**

The performance of a golf club is enhanced through the provision of a void space behind a face plate and above a sole portion, to decrease club weight and provide single, or combinations, of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space and entire club. The weighted coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration hook or slice, and ballooning may be modified through the use of definable combinations of weighting strategies and sub-strategies.

18 Claims, 15 Drawing Sheets

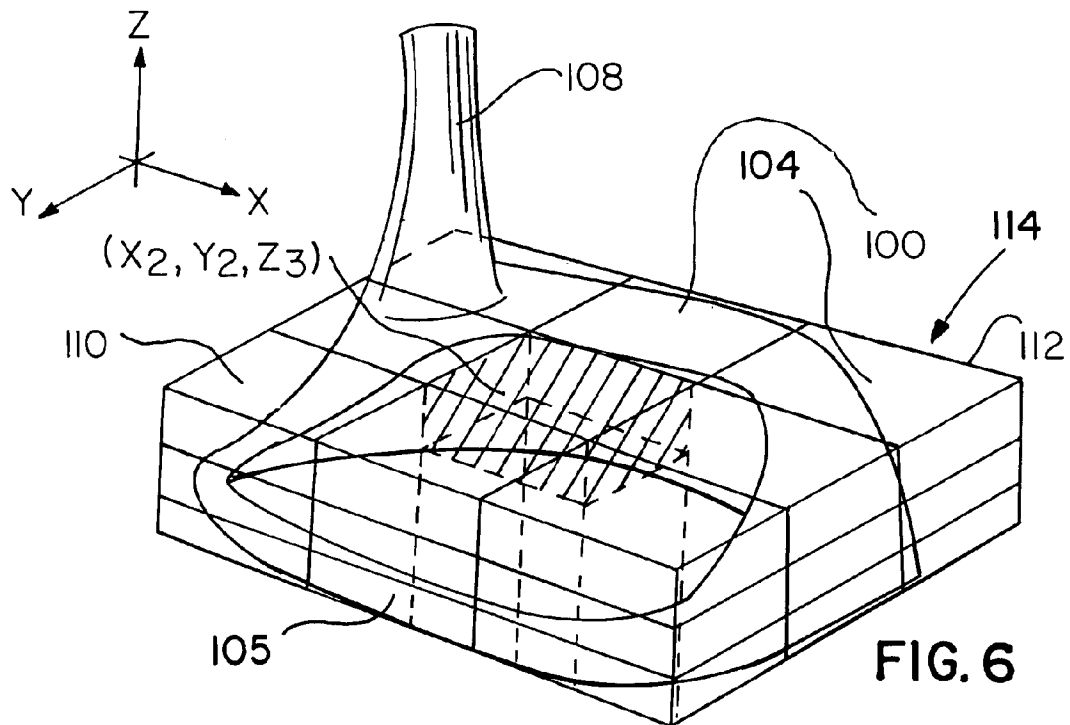
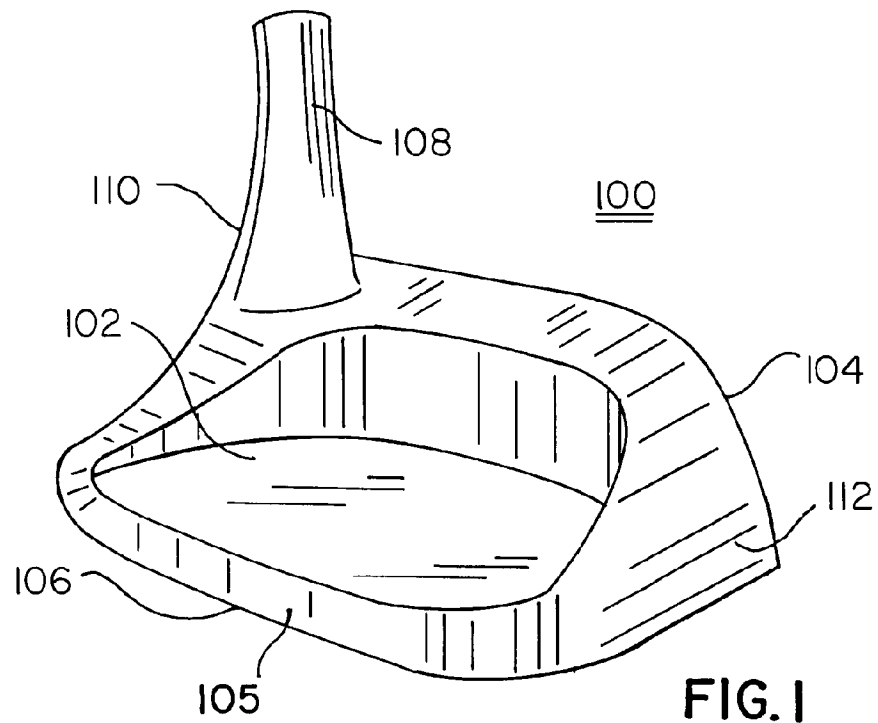


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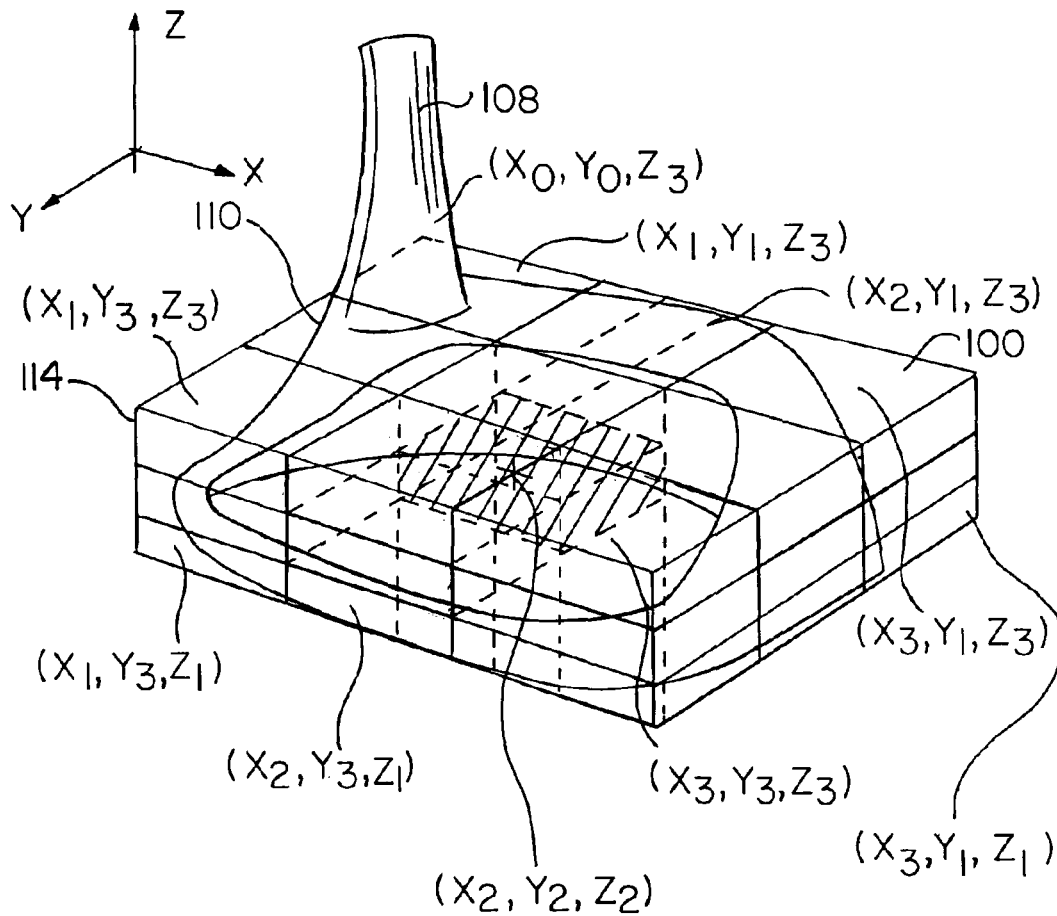


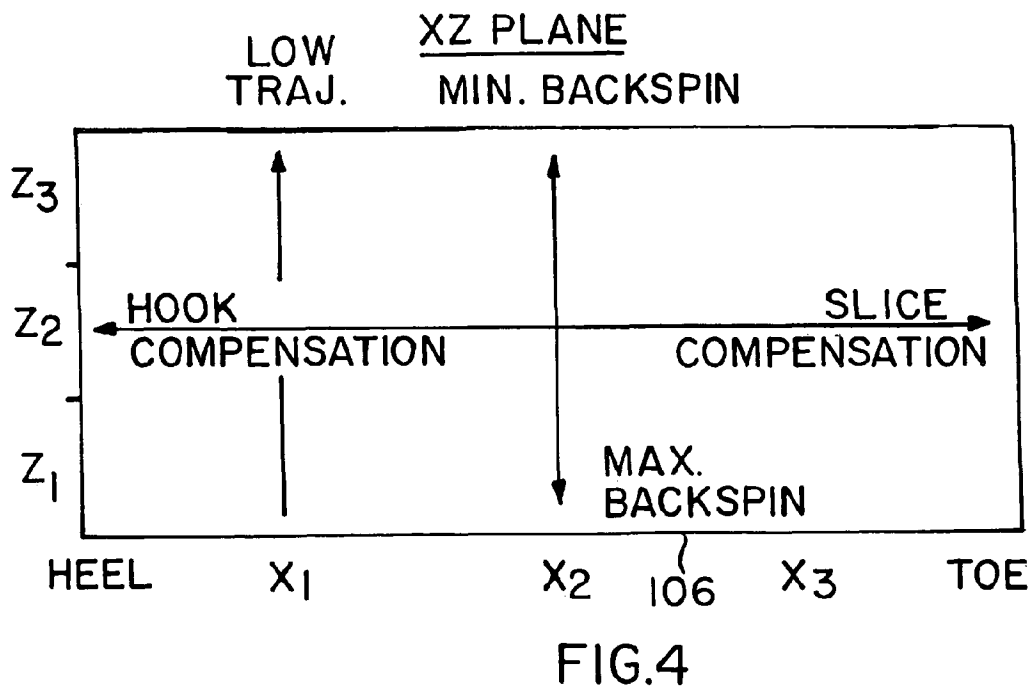
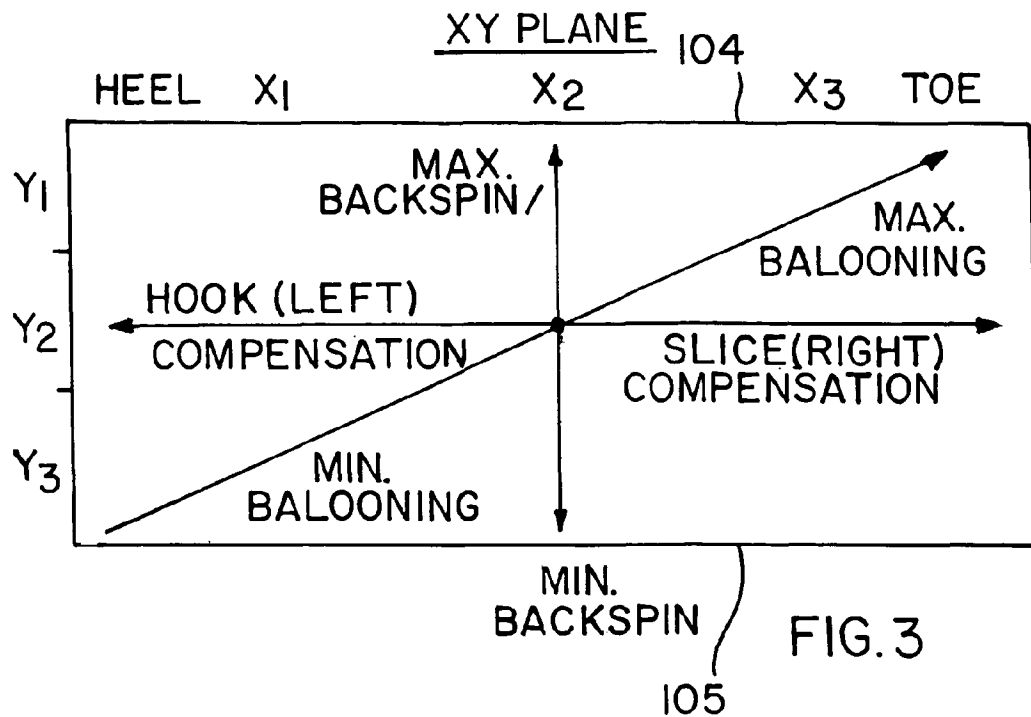
FIG. 2

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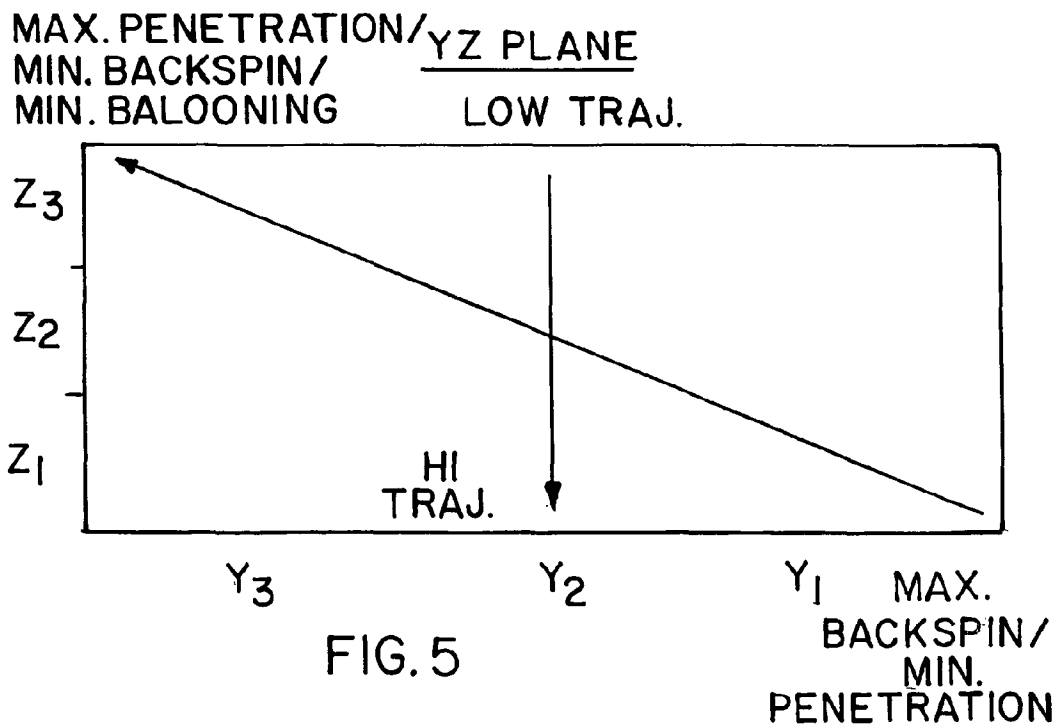
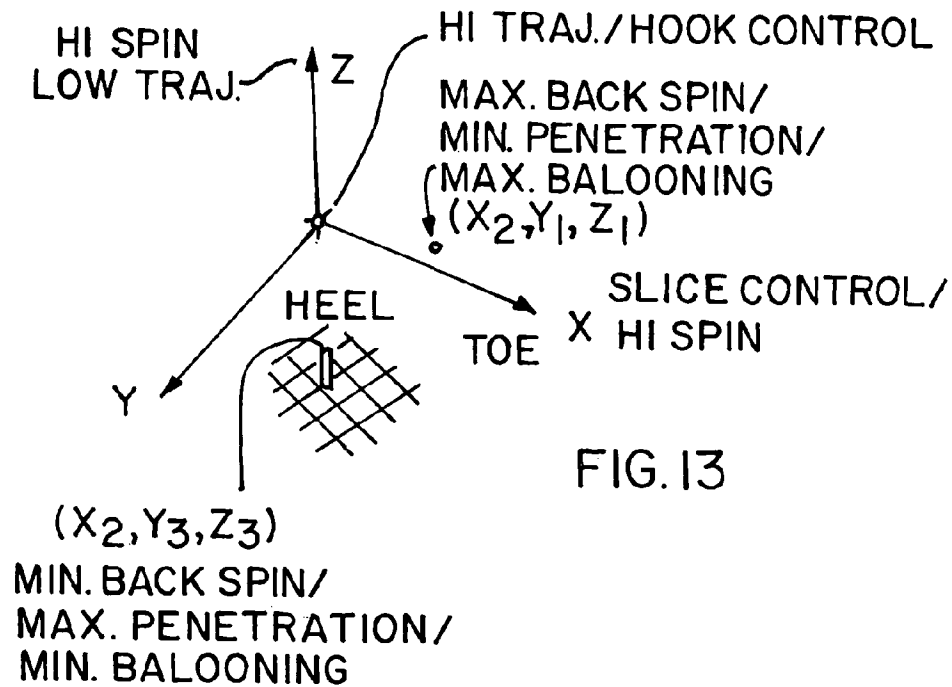


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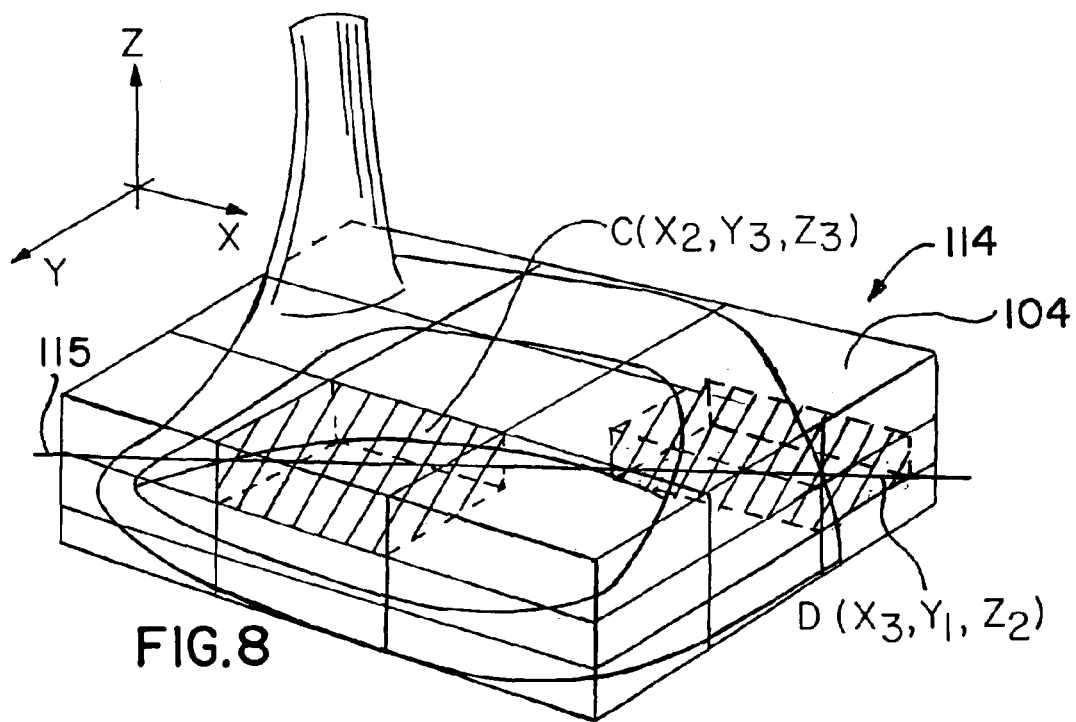
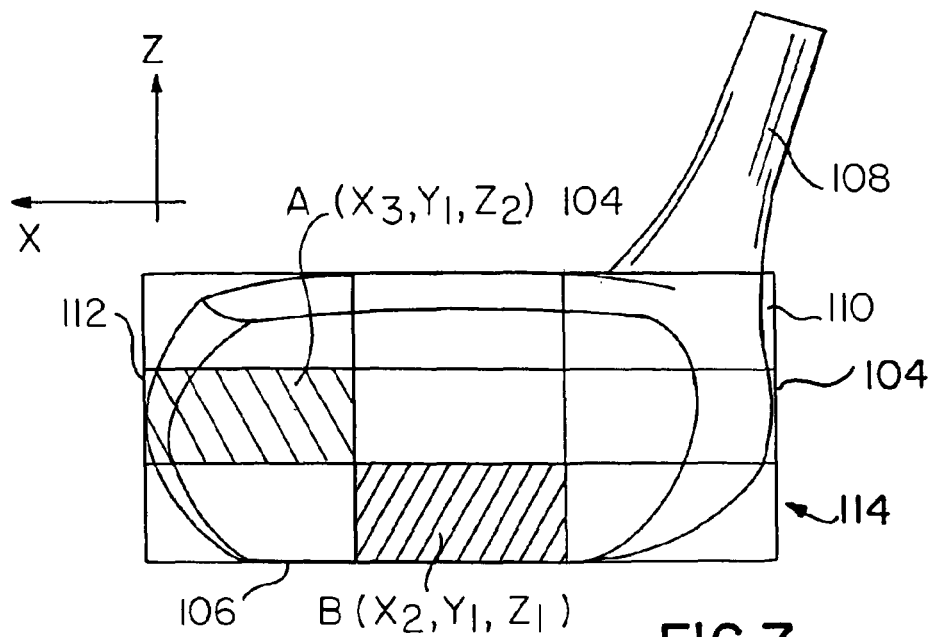


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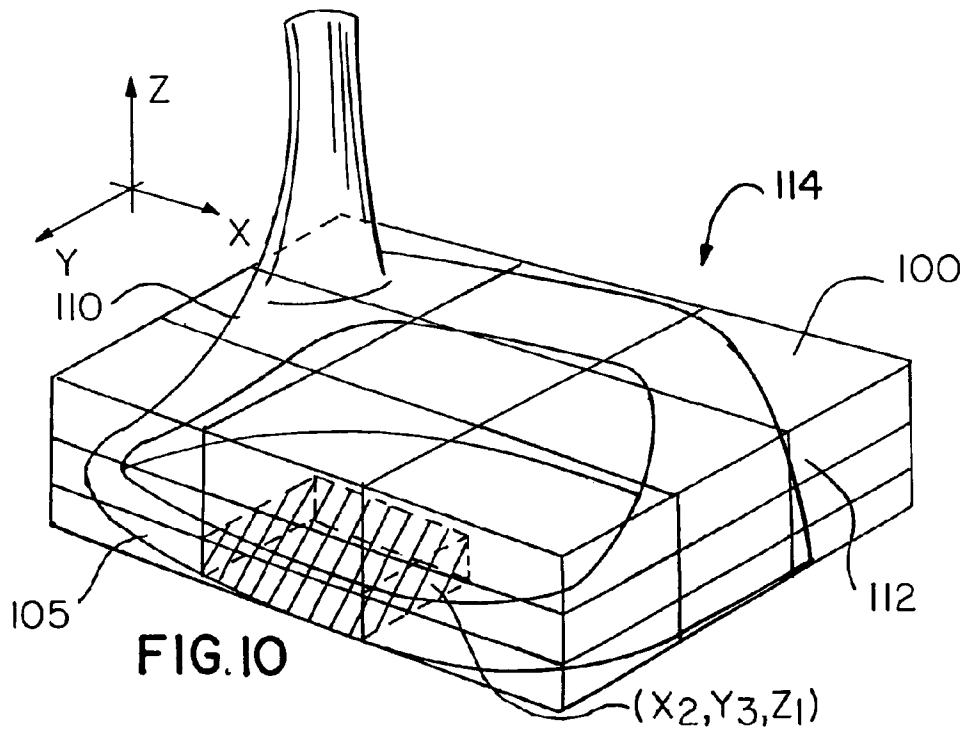
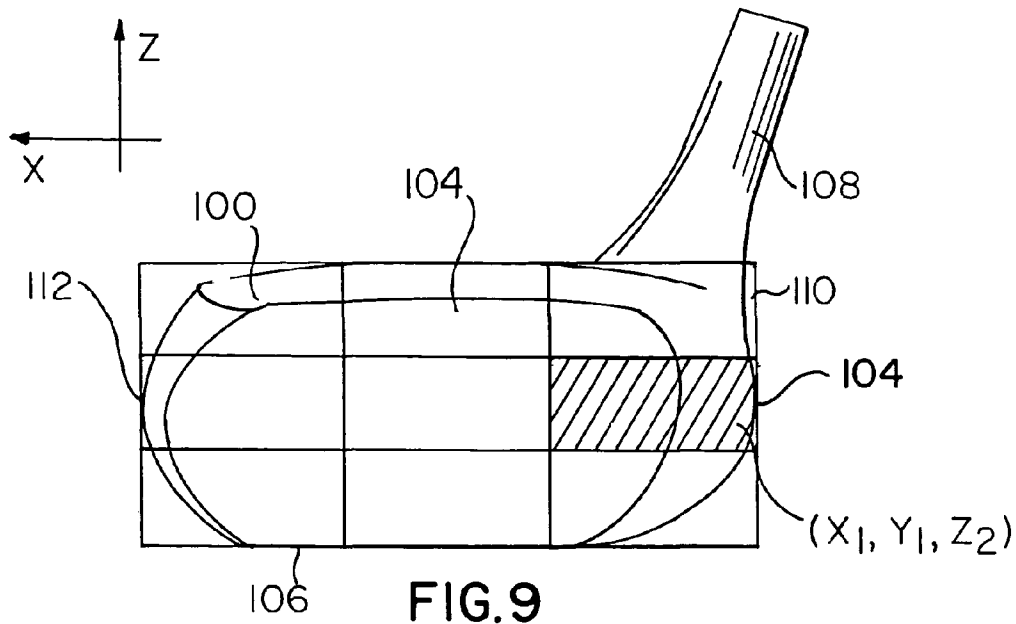


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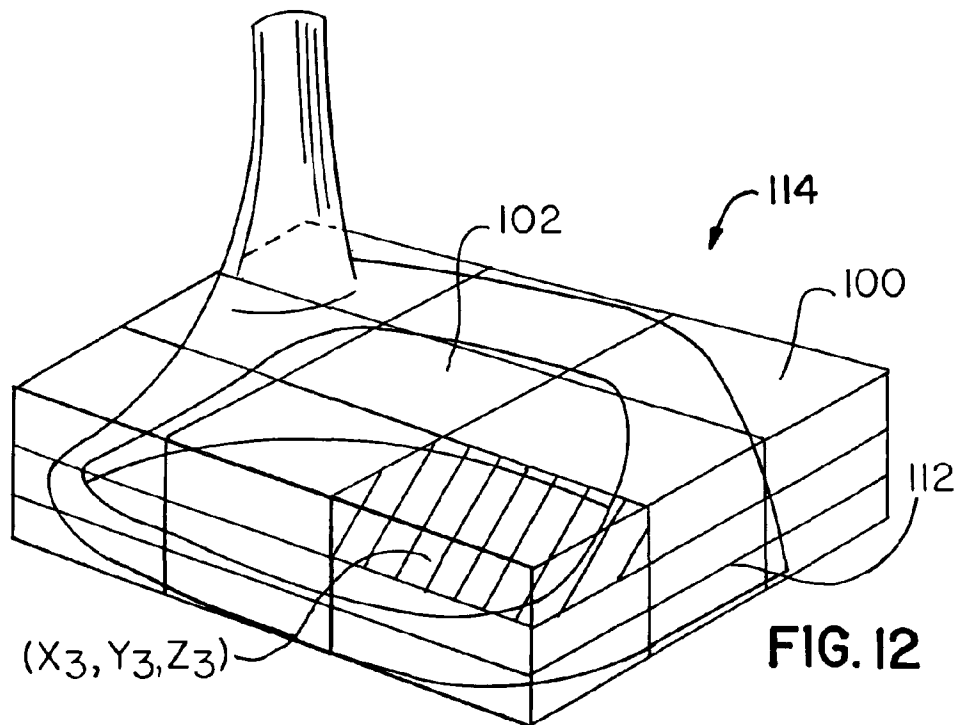
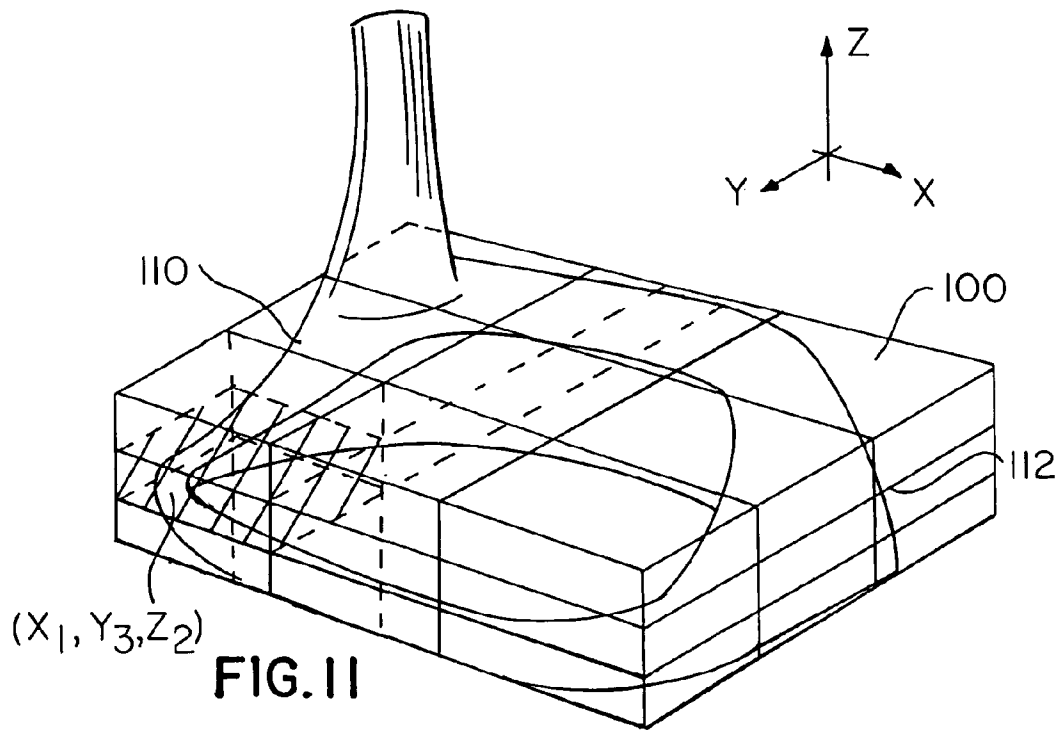


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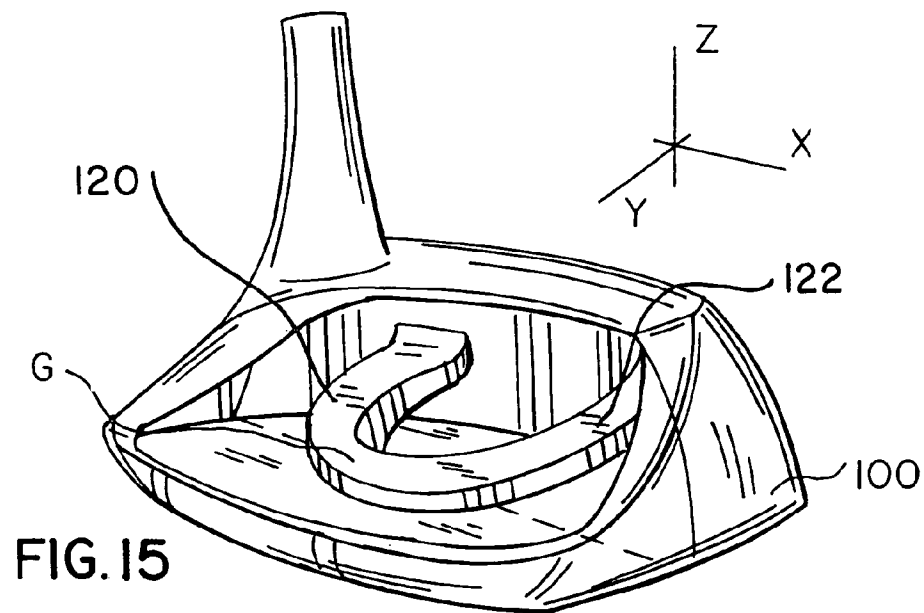
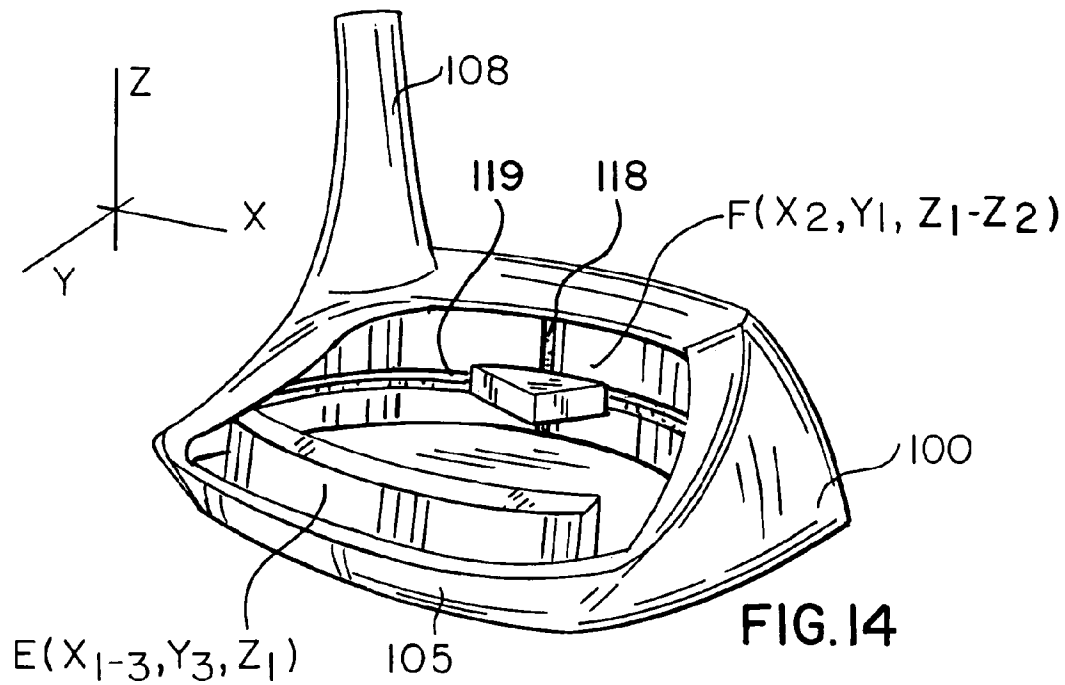


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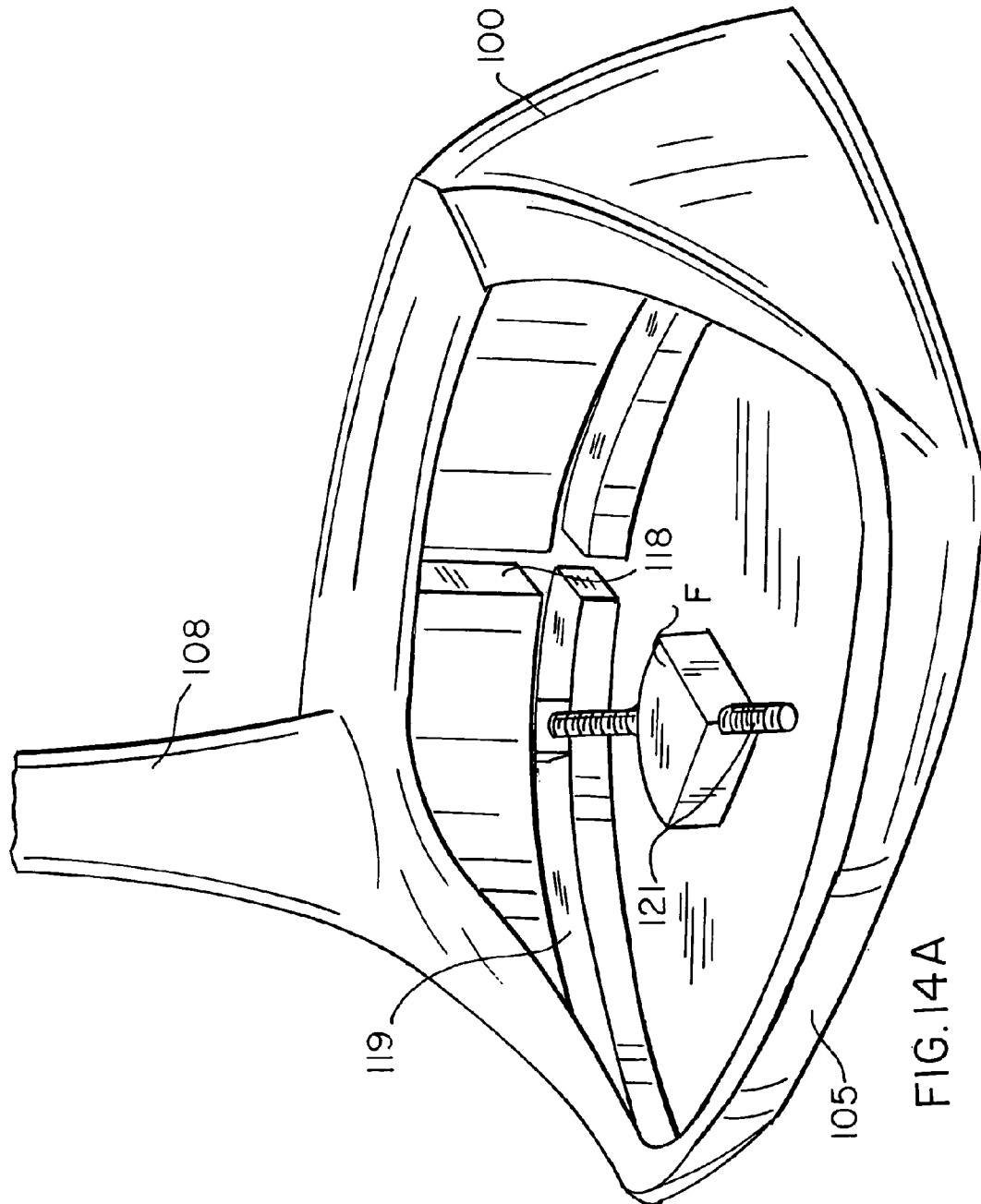


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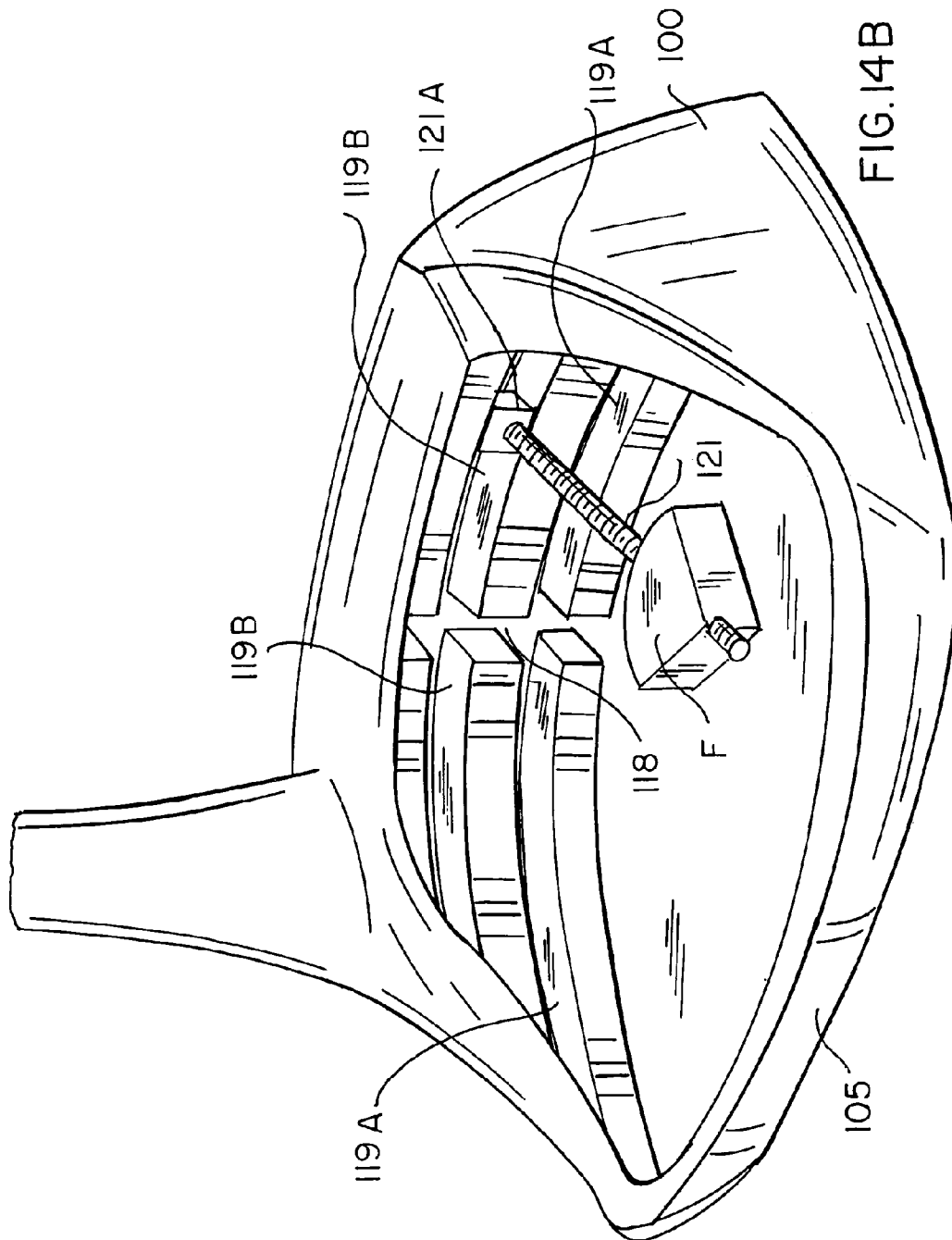


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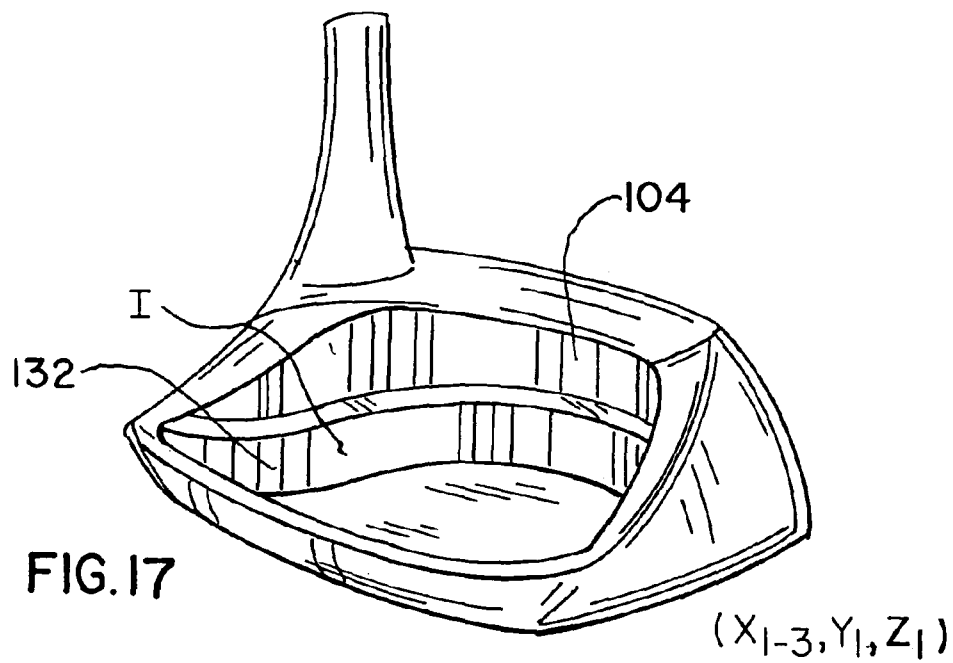
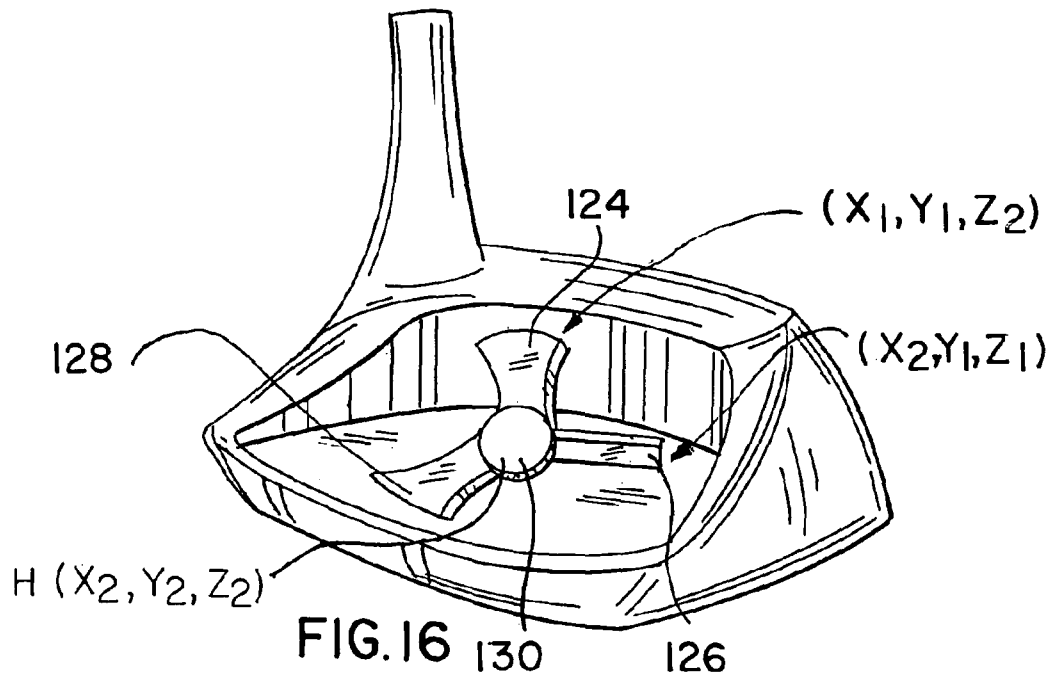


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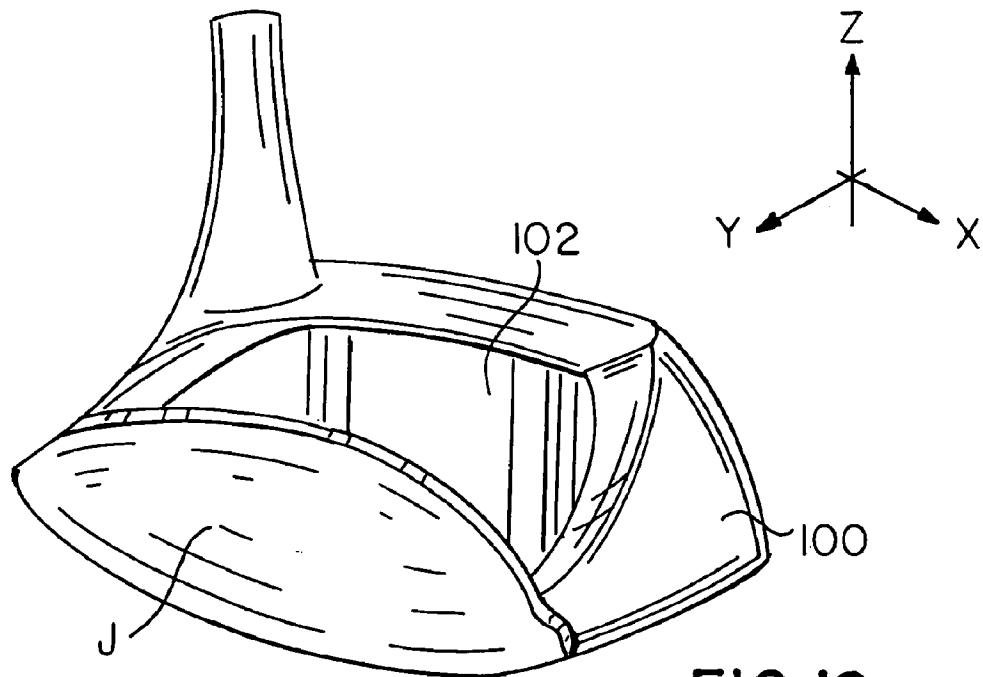


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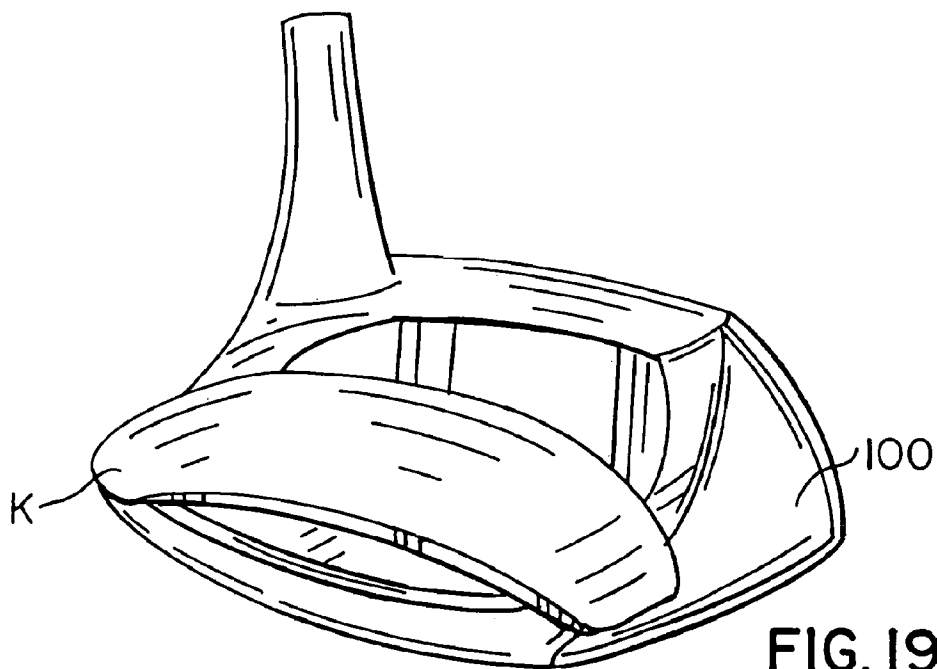
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$(X_1 - X_3, Y_3, Z_1 - Z_2)$



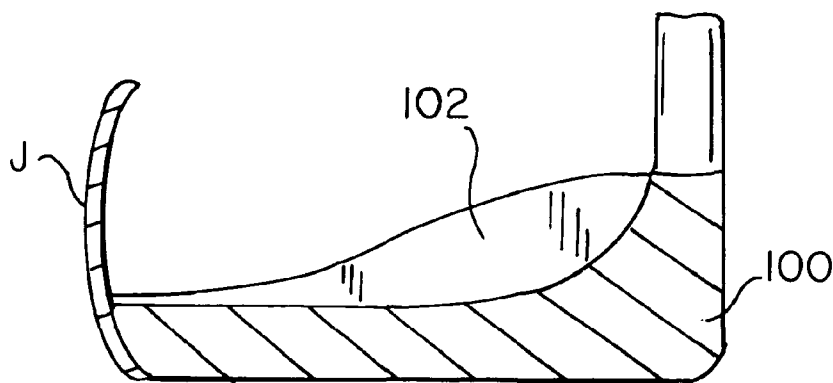
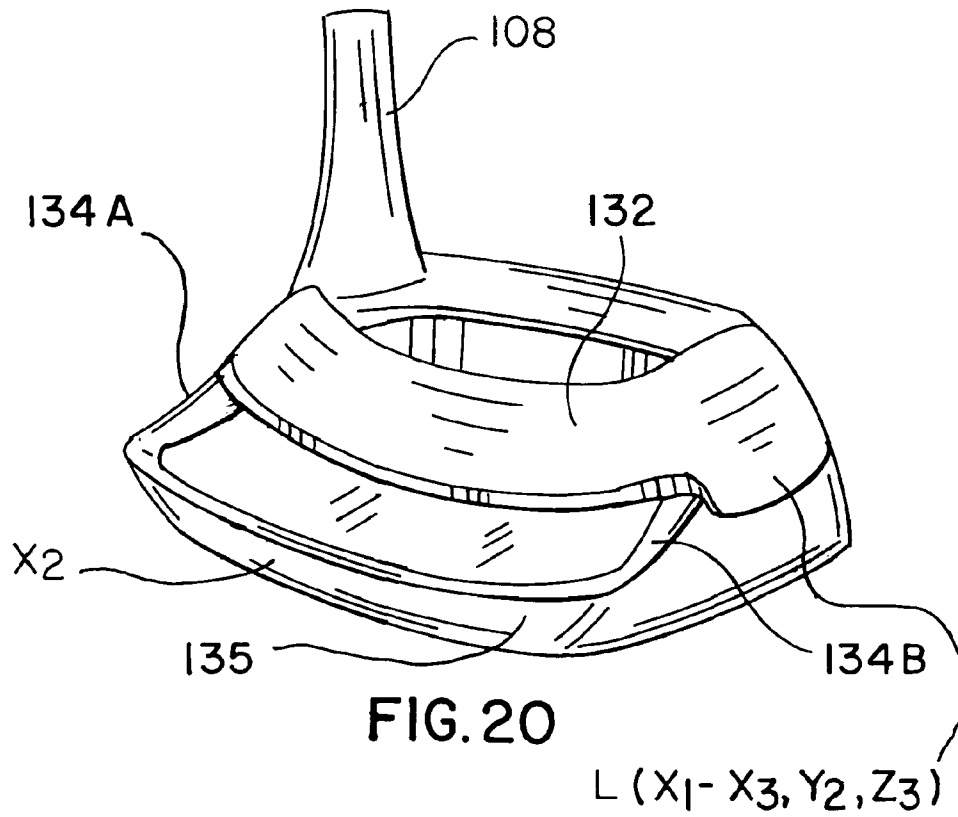
$(X_1 - X_3, Y_2 - Y_3, Z_2)$

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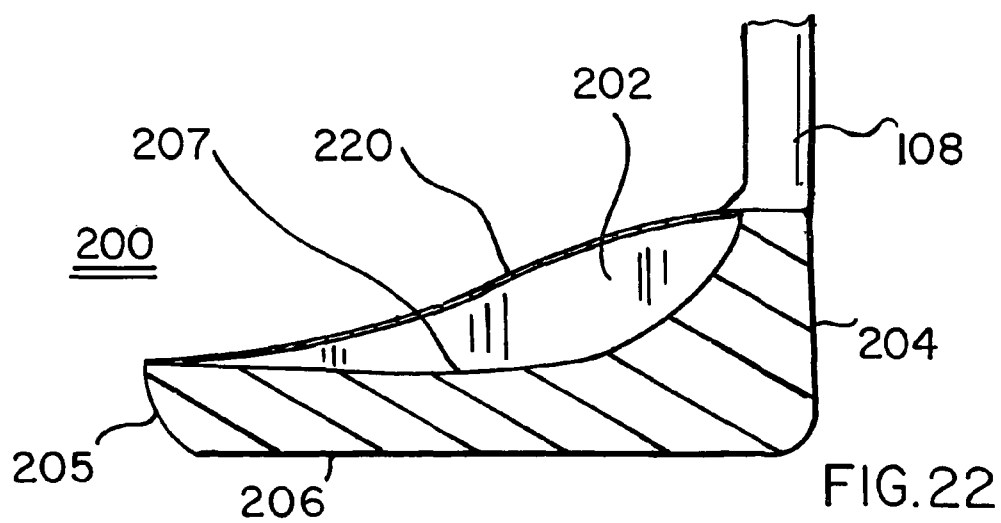
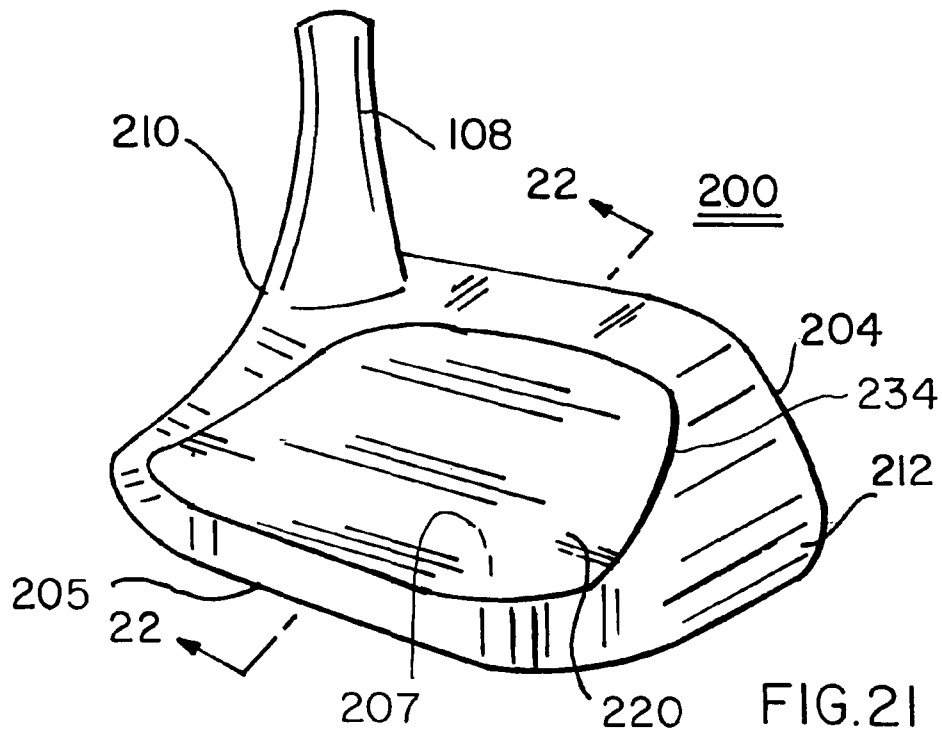


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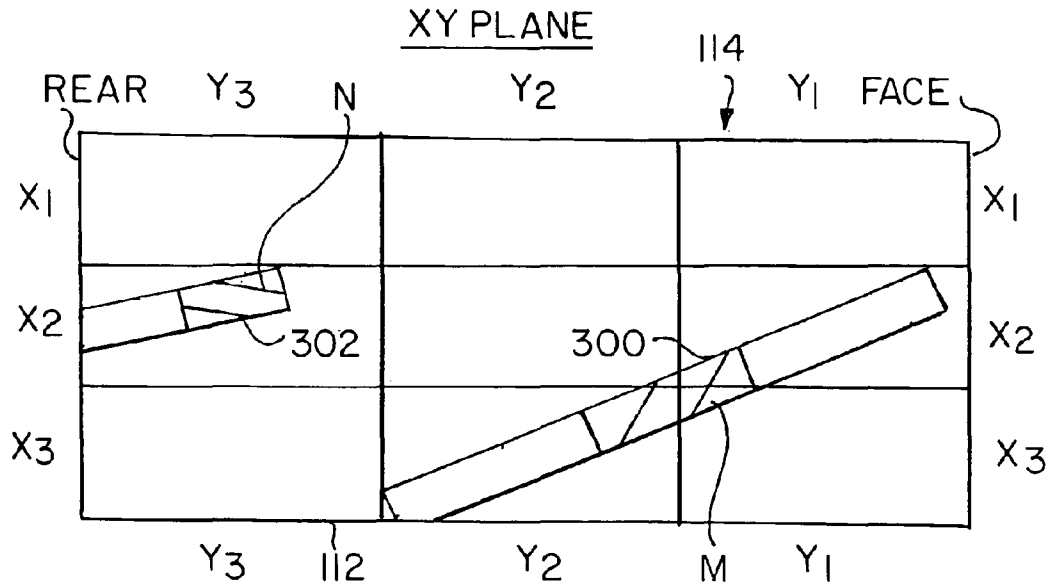


FIG. 23

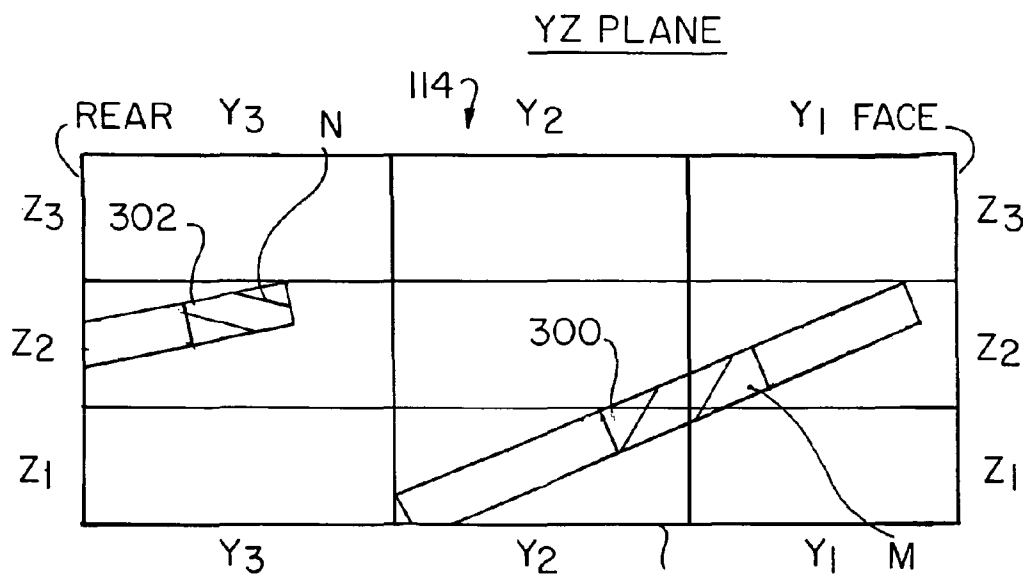


FIG. 24

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METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM

REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of application Ser. No. 10/818,899, filed Apr. 3, 2004, now U.S. Pat. No. 7,128,660 B2, which is a continuation-in-part of application Ser. No. 10/383,532, entitled Multi-purpose Golf Club, filed Mar. 10, 2003, now abandoned, which is a continuation-in-part of application Ser. No. 09/849,522, filed May 7, 2001, now U.S. Pat. No. 6,530,848, which claims the benefit under 35 USC 119(e) of Provisional Patent Application No. 60/205,250, filed May 19, 2000. Each of said applications is incorporated by reference herein.

BACKGROUND OF THE INVENTION

A. Area of Invention

The invention relates to a system of selectably varying the center of gravity and distribution of weighting in a void space in the head of a golf club.

B. Prior Art

Golfing enthusiasts appreciate the dynamic characteristics of golf irons and woods and the manner in which performance of the same will vary as a consequence of physiologic characteristics of a particular golfer. Such physiologic factors will affect a variety of ball strike parameters including, without limitation, loft trajectory, inertial spin, range hook and slice.

Use of a cavity within the upper surface of a putter type golf club in to vary the weight or balance of the heel, toe and bottom portions of a putter club head, and certain uses of weights therein, is recognized in U.S. Pat. No. 5,683,307 (1997) to Rife, entitled Putter Type Golf Club Head with Balance Weight Configuration and Complementary Ball Striking Face. U.S. Pat. No. 3,841,640 (1974) to Gaulocher, entitled Golf Putter, reflects a rudimentary recognition of the importance of proper weighting within the head of a golf putter to compensate for physiologic needs and preferences of a golfer. Such approaches in the prior art have attempted to address one or another problem associated with the golf strike characteristics or, in some cases, the characteristics of the golf range surface. As is well known, golfing greens are replete with imperfections which affect ball speed, spin and roll. Accordingly, a wide range of both ball flight and ground surface performance factors can be attributed to weight distribution and position of the CG within the club head.

U.S. Pat. No. 4,909,029 (1990) to Sinclair employs an upper void space to modify the aerodynamics of the head of the golf ball.

U.S. Pat. No. 5,947,840 (1999) to Ryan relates to a golf club head having a single plane of a triangular shape by which weight distribution may be accomplished.

Published U.S. Specification US 2003/0199331A1 teaches use of a re-positionable weight chip in a golf club to modify club performance.

My issued U.S. Pat. No. 6,530,848 (2003) sets forth the use of weighting options for the center of gravity ("CG") of a club resultant from a substantial hollowing out of or void space in a top or predominant portion of the club head, as a manufacturing step. Said void space teaches the significance of placement of the position of a weight within such hollowed-out portion to effect a variety of ball strike and flight characteristics including increase or decrease of clockwise spin, counter-clockwise spin and back spin of the ball so propelled by the golf club. Said patent further sets forth the variability of

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a weight element at any point on top of the sole plate to adjust the weight of the golf club to induce a more desirable ball spin to thereby accomplish an improved trajectory of ball flight. My said U.S. patent also teaches the use of a selectable "inner concave surfaced weight" to achieve vertical (Z) axis, as well as sole plate level (xy plane) adjustability. As shown in FIG. 4 thereof, said FIG. 4 illustrates a sole plate having an inner concave surfaced weight as viewed from above. The sole plate has a rim which matches a ledge shown in FIG. 3 thereof. Four apertures are formed through the rim to secure the selectable concave weight to the rim.

U.S. Pat. No. 6,991,558 (2006) to Beach relates to a limited sub-set of the present system.

The present inventive system reflects my discovery that many more options for positioning of the CG and distribution of weight or weights within the head of a golf club, whether that club comprises an iron, a wood, or a hybrid thereof, exist in positioning, behind the club face, selectable high density weighting elements at coordinates of an orthonormal matrix up to 27 potential locations in a void space, to compensate for physiologic imperfections in one or more characteristic of the swing of a golfer. The angulation and curvature of the club face relative to said matrix provides a yet further performance enhancing parameter that co-acts with weight elements within said matrix.

SUMMARY OF THE INVENTION

The performance of golf club heads made of wood, plastic, metal, and composites thereof may be enhanced through the provision of a void space behind a face plate and above the sole portion, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix within said void space. Said coordinates are provided as a function of ball strike, flight analysis and physiologic or computerized observation of the golf strike swing. In a basic embodiment, ball flight may be affected by varying the mass of a selectable sole portion which may be uniformly or variably weighted from the club hosel to toe end. Weight of uniform or non-uniform distribution may also selectably be provided within the void space behind the face plate and above the fixed sole portion. The angle and curvature of the face plate may also be varied.

The invention more particularly comprises a virtual X, Y, Z orthonormal coordinate system in which a sole portion is substantially congruent with a bottom-most XY plane thereof, in which a face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of the club head intersects a YZ plane thereof substantially at an origin of the coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of the club, an increase Y-axis value corresponds in direction to a rear of the club, and an increase in Z-axis value corresponds to an increase in height above said bottom-most XY plane. The golf club adjustment system comprises: (1) a club head having a void space behind the face plate of said club and above the sole portion thereof which void space is substantially conformal in geometry and volume to that of the club head; and (2) two selectable weighting means in which at least one weighting means thereof is not contiguous to any part of the face plate in which a selected value upon the Y-axis in any one of the weighting means does not equal a selected value of Y for a second of the weighting means, the selectable means comprising any two of: (a) weighting means substantially within the void space between a lower Y, lower Z coordinate, to increase backspin, to a higher Y, higher Z coordinate to decrease backspin; (b) weighting means substantially within

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the void space between a higher Y, higher Z coordinate, to maximize penetration, to a lower Y, lower Z coordinate, to minimize penetration; (c) weighting means substantially within the void space between a lower Z coordinate, to increase trajectory, to a higher Z-coordinate to decrease trajectory; or (d) weighting means substantially within the void space at a lower X coordinate, to compensate for hook, to a higher X-coordinate to compensate for slice.

In a further embodiment of the invention, a sole portion intersects a bottom-most XZ plane thereof, in which a face plate intersects a forward-most XY plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to an increase in height above said bottom-most XY plane. The golf club adjustment system comprises: (a) a club head having a void space behind said face portion of said club and above said sole portion thereof; (b) weighting means substantially within said void space between a higher Y, higher Z coordinate, to minimize ballooning, to a lower Y, lower Z coordinate to maximize said ballooning; and (c) weighting means substantially within said void space between a lower X-coordinate, to compensate for hook, to a higher X-coordinate to compensate for slice.

It is an object of the invention to provide a golf club having a weight modifiable club head, inclusive of interchangeable sole portion and/or weighting elements, which express a universal method of golf club head modification to account for ball backspin, penetration, trajectory, and hook or slice.

It is another object to provide a wooden, plastic or metal golf club having a head with a hollowed out portion behind the face plate and above a uniform or non-uniform sole portion.

It is a further object of the invention to provide a golf club head with a hollowed-out void space, made during production, to a golfer's preference, and further providing a modifiable sole portion, with or without addition integral or added weights selectable positioned in volumetric coordinates of a virtual matrix about said void space.

It is a further object to provide a club head, modified with a hollow interior and having selectable point, axis, vector distributed linear or non-linear weights which may be inserted or removed to suit particular preferences, needs and physiologic requirements of a golfer.

It is a yet further object of the invention to provide improved elements and arrangements thru a method of providing an inexpensive, durable and effective means of compensating for ball spin, ball flight trajectory, ball spin and golf course surface variables.

The above and yet other objects and advantages of the present invention will become apparent from the hereinafter set forth Brief Description of the Drawings, Detailed Description of the Invention, and Claims appended herewith.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the head of a golf club configured for the practice of the present inventive method and products thereof.

FIG. 2 is an illustration of a virtual three-dimensional orthonormal matrix by which the inventive method may be practiced.

FIG. 3 is a graph-type illustration a golf club performance parameters which may be effected by weighting within the XY plane of said orthonormal matrix.

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FIG. 4 is a graph showing the golf performance parameters which may be influenced by weighting within the XZ plane of said matrix.

FIG. 5 is a graph showing the club performance characteristics which may be influenced by weighting within the YZ plane of said matrix.

FIG. 6 is an illustration of a weighting of a club head of the type of FIG. 1 at a (X2, Y2, Z3) coordinate of said matrix.

FIG. 7 is a front plan view of the club of FIG. 1 showing weighting at a (X3, Y1, Z2) coordinate and at a (X2, Y1, Z1) coordinate.

FIG. 8 is a view, similar to that of FIG. 6, however showing weightings in a diagonal relationship in the club of FIG. 1, that is, at a (X2, Y3, X3) coordinate and at the (X3, Y1, Z2) coordinate.

FIG. 9 is a view, similar to that of FIG. 7, however showing weighting at a (X1, Y1, Z2) coordinate.

FIG. 10 is a view, similar to that of FIG. 6, however showing weighting at a (X2, Y3, Z1) position.

FIG. 11 is a view similar to that of FIG. 6, however showing weighting at a (X1, Y3, Z2) coordinate.

FIG. 12 is a view, similar to that of FIG. 6, however showing weighting of the club head at a (X3, Y3, Z3) coordinate of the orthonormal matrix.

FIG. 13 is a three-dimensional graph showing the effect of weighting at different combinations of the X, Y, and Z coordinates of the orthonormal matrix and the parametric results of such weighting.

FIG. 14 is a view of a club head of the type of FIG. 1, however showing the use of multiple weights across multiple coordinates.

FIGS. 14A and 14B are alternative versions of the embodiment of FIG. 14, showing a diagonal relationship of weighting elements as in FIG. 8.

FIG. 15 is a view, the use of a horse shoe weighting element to broaden the sweet spot and to achieve other modifications of ball flight performance.

FIG. 16 is a view showing the use of a propeller type weighting element to modify golf club performance.

FIG. 17 is a view in which a strip-like element is used to modify club performance.

FIG. 18 illustrates the use of a clip-on element to achieve particular modifications of golf strike and ball flight characteristics.

FIG. 18A is a side cross-sectional view of the embodiment of FIG. 18.

FIG. 19 shows a further snap-on element to provide different performance characteristics.

FIG. 20 shows a yet further snap-on weighting element for the modification of ball strike characteristics.

FIG. 21 shows use of an enclosure or cover over the void space of the club head.

FIG. 22 is a cross-sectional view taken along Line 22-22 of FIG. 21.

FIGS. 23-24 show an embodiment, further to that of FIGS. 8 and 14, in which the concept of adjustable weighting elements along diagonals in the XY and YZ planes is shown, these figures generally corresponding to FIGS. 3 and 5 above.

DETAILED DESCRIPTION OF THE INVENTION

With reference to the perspective view of FIG. 1, there is shown a golf club head 100 modified from the shape of more conventional golf club heads through the provision of a void space 102 behind a face plate 104 above a sole portion 106 of the club head 100. Said void space is substantially conformal in geometry and volume to said club head. Also shown in FIG.

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1 is a golf club hosel 108 which enters the club head at a heel 110 of the club. Located oppositely to heel 110 is club toe 112. Also shown is trailing edge 105 of the club head.

In FIG. 2 is shown an orthonormal matrix 114 which surrounds the club 100, and is defined by an X, Y and Z coordinate system corresponding to the three essential axes of the club, shown to the upper left of FIG. 2. Said X, Y and Z axes of said orthonormal matrix 114 provide for a 3x3x3 system of 27 volumetric coordinates. Therein, the position (X₀, Y₀, and Z₃) defines the location at which hosel 108 enters club head 100. The (X₂, Y₂, Z₂) position, shown in shading in FIG. 2, represent the center of gravity of the club and is consistent with a normal or standard flight of the golf ball. In other words, a golfer having a perfect golf swing would, in accordance with the present system, apply a weighting element to a club head, of the type of club head 100, at position (X₂, Y₂, Z₂) of the matrix shown therein. For ease of reference in the figures which follow, applicable coordinate nomenclature for various positions of said three 3x3x3 weighting system are also shown.

In the charts of FIGS. 3-5 are shown the XY, XZ and YZ coordinate relationships which affect particular parameters of ball strike, path, trajectory and rotation which are of interest to golfers. More particularly, shown in FIG. 3 is the effect of different types of weighting within the XY plane of orthonormal matrix 112, that is, the horizontal plane thereof. Therein, weighting in the +X or toe direction will increase ballooning of flight path of the golf ball, so that +X weighting direction of the club will also provide for slice (right curvature) compensation of the golf ball. See FIG. 3. Conversely, weighting toward the heel or in the -X direction will provide for hook (left curvature) compensation. FIG. 3 also indicates that maximum backspin of the ball may be achieved by weighting at a low y position, that is, near the plane of the face plate, while minimum back spin may be accomplished through weighting toward the rear of the club, this corresponding to the Y₃ position.

With reference to FIG. 4, one may note that hook or slice compensation, as in FIG. 3, remains a function of the weighting along the X-axis. In the XZ plane which is a vertical plane co-parallel with club hosel 108, trajectory may be controlled as a function of position of weighting upon the z-axis, that is, the lowest z-axis position (Z₁) will afford the highest trajectory, whereas the highest z-axis position (Z₃) will produce the lowest trajectory of ball flight.

Backspin of the ball is also a function weighting along the Z-axis. As may be noted by the line at the middle of FIG. 4, the Z₁ position will produce a maximum spin of the ball, while weighting at Z₃ will produce a minimum backspin. Accordingly, viewing FIGS. 3 and 4 in combination, it may be appreciated that a minimum backspin may be achieved by weighting at the (X₂, Y₃, Z₃) coordinate, while maximum backspin may be achieved by weighting at the (X₂, Y₁, Z₁) coordinate, as will also be illustrated in the figures which follow.

With reference to FIG. 5, this chart corresponds to the YZ plane which is a vertical plane substantially parallel with toe face 110 of the club (see FIGS. 2 and 6).

From FIG. 5, it may be noted that minimum penetration, that is, maximum apex of ball flight, is achieved at the (Y₁, Z₁) position, while maximum penetration is achieved at the (Y₃, Z₃) position. Further, the highest trajectory may be seen to exist at the (Y₂, Z₁) position, while the lowest trajectory is achieved at the (Y₂, Z₃) position. Minimum backspin and minimum ballooning are achieved at (Y₃, Z₃) and maximum backspin and maximum ballooning at (Y₁, Z₁).

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With the above in mind, the weighting coordinate (X₂, Y₂, Z₃), which is shown in FIG. 6, should be appreciated as one that does not provide for either hook or slice compensation but which provides for reduced trajectory (flatter path of ball flight) and some decrease in backspin due to the Z₃ part of the coordinate shown.

In FIG. 7 are shown two different weighting coordinates, both within the Y₁ region which includes the plane of face plate 104 of the club head, but in diagonal relationship to each other. More particularly, a weighting element A shown to the left of FIG. 7 is the (X₃, Y₁, Z₂) position and affords neutral ballooning, slice compensation, and some additional backspin. In distinction, weighting element B of coordinate (X₂, Y₁, Z₁) provides for high trajectory, maximum backspin and minimum penetration.

With reference to FIG. 8, two weighting elements XY and YZ are shown in diagonal relation to each other along an axis 115. Therein, weighting element C (coordinate X₂, Y₃, Z₃) provides for low trajectory, minimum backspin and maximum penetration, while element D of FIG. 8 provides for minimum ballooning of ball flight, slice (right curvature) compensation and medium trajectory. Note that element D does not touch faceplate 104, that is, the Y=0 position of the coordinate system. See also Figs. Elements C and D may be adjustably secured within a channel along said axis 115 between said elements.

With reference to the weighing element at (X₁, Y₁, Z₂) shown in FIG. 9, such an arrangement will provide for neutral ballooning, hook compensation, slightly additional backspin and medium trajectory. Note that said weighting element does not abut face plate 104.

The weighting element (X₂, Y₃, Z₁) shown in FIG. 10 affords high trajectory, high backspin and high penetration, although not as high penetration as would exist were the weighting at the (X₂, Y₃, Z₃) position.

Shown in FIG. 11 is a weighting element at the (X₂, Y₃, Z₂) position. Thereby, there is achieved hook compensation, high penetration and, no change in the ball's natural trajectory.

In the weighting scheme shown in FIG. 12, that is, weighting at the (X₃, Y₃, Z₃) coordinate position, one achieves slice compensation, decreased backspin, low trajectory and maximum penetration. The weighting elements shown in FIGS. 2, and 6-12, may be secured within void space 102 of head 100 by any number of means including threaded channels, tracks, rods, low density, foam, and combinations thereof. See FIGS. 14A and 14B below.

Three-dimensional relationships of the above-described parameters of backspin, penetration, trajectory and ballooning are illustrated in FIG. 13. It may be appreciated that ballooning control occurs primarily as a function of the Y and Z axes and maximum backspin occurs as a function of weighting at the (Y₁, Z₁) position with minimum backspin occurring with weighting at the (Y₃, Z₃) position. Penetration is also a function of the combined effect of two axes, that is, maximum penetration occurring with weighting at the (Y₃, Z₃) position and minimum penetration occurring with weighting at the (Y₁, Z₁) coordinate.

In FIG. 14 is shown the use of weights E and F in two different areas of the golf club 100 of FIG. 1. Therein, a good player would move weight E to the back of the club to achieve as penetrating a shot as he could, and would also position weight F to reduce the spin, putting additional weight in the X-axis center (X₂) of the club. This makes the sweet spot smaller, that is, the player must strike the ball right at the center (X₂). That is, an ideal strike which would result in the best transference of energy from club to ball. However, it

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causes a largest margin of error. Such a golfer therefore would need to be a rather good player to move weight F to the center of the face. Said weight E also maximizes penetration. Element F may be adjustable secured on a vertical track **118** or a horizontal track **119**, and element E may have a variable density in an X axis.

FIG. **14A** presents a variation of the embodiment of FIG. **14** in which a threaded bolt **121** is provided, onto which element F may be threaded to a desired coordinate in the XY plane after a desired location of a secured end **121A**, within track **118** or **119**, has been established. This provides XY plane adjustability in the manner shown schematically in FIGS. **3**, **13** and **23**.

FIG. **14B** is another variation of the embodiment of FIG. **14** in which two horizontal tracks **119A** and **119B** are provided to achieve different Z-axis adjustments. The embodiments of FIGS. **14A** and **14B** may be employed either with or without strip-like element L of FIG. **14**, or a smaller such strip may be provided at any segment along trading edge **105** of the club.

In FIG. **15** is shown the effect of a horse shoe-like structure G, symmetric about the YZ plane at the X2 position. This helps the basic or average player. Such a player moves the weight toward the heel and the toe **112** to make his sweet spot as wide as possible. Structure G also moves the weight down toward the back to get some height on the ball, and also to get more penetration to pick-up some distance. This would be a club for a basic, standard player who simply needs some help that is not interested in slice hook combination. It's just addressing trajectory and spin rate. Arm **120** of element G may exhibit a greater mass than area arm **122** to provide X axis, i.e., hook-slice compensation.

With reference to FIG. **16**, there is shown the use of a propeller type weight H, having its center at (X2, Y2, Z2), which would be used if one were hitting the ball a bit to the left and low. To compensate for that, the weight is moved to the left, so that the ball will move to the right. To counteract the moving the weight to the left, one may place a projection of the weight H down toward the right hand corner to get the ball up into the air again, and to also move another projection to the rear for penetration and movement up in the air. One or more arms **124**, **126** and **128** of element H may be made of different density materials, masses and/or geometries to afford X, Y, Z adjustability of ball flight characteristics. The arm **124** provides hook adjustment at the (X1, Y1, Z2) coordinate. Arm **126** provides maximum ballooning at the (X2, Y1, Z1) coordinate. The location of center **130** of weight H will affect flight characteristics as shown in FIGS. **3**, **4**, **5** and **13**.

With reference to FIG. **17**, there is shown the use of a saddle-like weighting element I inserted along the sides and behind the face plate, but preferably not abutting it. The benefits of such a weighting geometry are that the weight is set to hit the ball a little higher because the weight is low. It also tends to give it a bit more of penetration, because the weight is moved back. By also moving it to the left, one pushes the ball out to the right, tending to give a shot slightly to the right and is penetrating, but yet will have some spin on it. So it starts out low, goes right and then slows down. Further, left side **132** of element I may have a greater mass than the opposite side if heel weighting is desired.

The following charts relate coordinates of the above weighting coordinates to the figures, by planes of the orthonormal matrix.

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CHART 1

(xy plane)			
	X1(heel)	X2	X3(toe)
Y1	FIG. 9	FIGS. 7 Element B) 14 (Element F)	FIGS. 7 (Element A), 8 (Element D)
Y2		(Element H) FIGS. 2, 6, 16	FIG. 23 (Element M)
Y3	FIGS. 11, 14 (Element F)	FIGS. 8 (element C), 10 14 (Element E) 23 (Element N)	FIGS. 10, 14 (Element E)

CHART 2

(XZ plane)			
	X1(heel)	X2	X3 (toe)
Z1(heel)		FIGS. 7(Element B), 10, 16	
Z2	FIGS. 9, 11	FIGS. 2, 14 (Element F)	FIGS. 7 (Element A) 8 (Element D)
Z3		FIGS. 6, 8 (Element C)	FIG. 10

CHART 3

(yz plane)			
	Y1(face)	Y2	Y3(rear)
Z1	FIG. 7(Element B)	FIGS. 16, 24 (Element M)	FIGS. 10, 14 (Element E)
Z2	FIGS. 7(Element A), 8 (D), 9	FIG. 5	FIGS. 11, 24 (Element N)
Z3		FIG. 6	FIGS. 8 (Element C), 12

In FIGS. **18-20** are shown the use of clip-on type weighting elements. More particularly, a weighting element J of FIG. **18** moves weight to the rear of the club, thus increasing penetration, while lowering the center of gravity of the club and increasing spin. Element J may be convex or concave, thus affecting Y-axis weighting, and J may exhibit an X or Z, an axis of selectably variable density. Its height may also vary. FIG. **18A** is a side cross-sectional view of FIG. **18** along the X2 portion of the club **100**.

In a weighting element K of FIG. **19**, weight is not moved back as far, and is raised-up slightly higher than that of element J, particularly at the X-axis center thereof, thus ensuring reduced ballooning because of the high Y, high Z weighting at the mid-X position. See also FIG. **5**. It is noted that element J spans all X-axis positions, as well as the Y2 and Y3 locations, thereby providing a hook/slice neutral correction of weighting, this as opposed to the slice (right curvature) compensation of element D (FIG. **8**) that is combined with the reduced ballooning effect of element C thereof. This also reduces penetration with slightly reduced backspin, the result being a more controllable ball strike.

In FIG. **20**, weighting element L provides a selectable angle elevation of weight element L **132** along edges **134A** and **134B**, thereby raising or lowering trajectory and widening the sweet spot, as in element G of FIG. **15**. It is noted that element L can also be positioned anywhere along edges

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134A/B. Also, if element L is asymmetric to the right of a YZ plane of symmetry thru location X2, slice compensation is also provided. In a high position on edges 134, low penetration is attained. In a lower position, high penetration is achieved. Movement of Element L relative to edge 134 also shows diagonally adjustable weighting in YZ plane. See FIGS. 5 and 24.

It is noted that many of the above functions of the weighting elements may be achieved thru variation in weight and dimension of sole portion 106 (see FIG. 1). For example, if a change in weight is indicated at a (X, Y, Z1) coordinate, a change in weight or weight-distribution in the sole portion will affect the parameters shown in the chart of FIG. 3. Also, as may be noted in FIG. 4, addition or reduction of weight at Z1 will affect trajectory and backspin.

Shown in FIGS. 21 and 22 is a further embodiment 200 of the invention in which void space 202 is covered by an enclosure 220 which may be attached either permanently or by snap-fit over the void space and surface 207 of sole portion 206 and trailing edge 205 thereof. Also shown in FIGS. 21 and 22 is face plate 204, heel 210, toe 212 and hosel 108.

In FIGS. 23 and 24 are shown weighting strategies further to that of FIGS. 8, 14, 14A, 14B and 20, showing another diagonal XYZ matrix weighting strategy. As may be seen, a single movable element M may furnish weighting at any segment along a vector that includes the (X3, Y2, Z1) and the (X3, Y1, Z2) coordinates and is also defined by a channel 300. Said vector exhibits a down-to-up and rear-to-face direction. Another movable element N may furnish weighting along a vector including the (X2, Y3, Z2) coordinate in channel 302, that is, a channel starting at the rear of the club. Such diagonal weighting is an effective way of obtaining multiple club performance objectives using a small number of weights, each movable within a single channel. Multiple channels may be optionally used. In this embodiment the location or use of elements M and N, each having different weights, can be exchanged between channels 300 and 302 for different club performance effects.

While there has been shown and described the preferred embodiment of the instant invention it is to be appreciated that the invention may be embodied otherwise than is herein specifically shown and described and that, within said embodiment, certain changes may be made in the form and arrangement of the parts without departing from the underlying ideas or principles of this invention as set forth in the Claims appended herewith.

What is claimed is:

1. In a virtual X, Y, Z orthonormal coordinate system in which a sole portion of a golf club is substantially congruent with a bottom-most XY plane thereof, in which a face plate of said club intersects a forward-most XZ plane of said system, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to an increase in height above said bottom-most XY plane, a golf club adjustment system, comprising:

- (a) a club head having a void space behind said face plate of said club and above said sole portion thereof, said void space substantially conformal in geometry and volume to that of said club head; and
- (b) two selectable golfer replaceable weighting elements in which at least one weighting element thereof is not contiguous to any part of said face plate in which a selected coordinate value upon the Y-axis in any one of said

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weighting elements does not equal a selected coordinate value of Y of at least a second one of said weighting elements, and at least one selected weighting element is not contiguous with any inner surface of said void space, said selectable elements comprising any two of:

- (i) a weighting element secured substantially within said void space between a lower Y, lower Z coordinate, to increase backspin, to a higher Y, higher Z coordinate to decrease backspin;
- (ii) a weighting element secured substantially within said void space between a lower Z coordinate, to increase trajectory, to a higher Z-coordinate to decrease trajectory; or
- (iii) a weighting element secured substantially within said void space at a lower X-coordinate, to compensate for hook, to a higher X-coordinate to compensate for slice.

2. The system as recited in claim 1, in which one or more of said weighting elements comprise a weight which is non-uniform along one or more of said X, Y or Z axes thereof.

3. The system as recited in claim 1, in which: said selectable weighting elements further comprise: a third weighting element.

4. The system as recited in claim 1, in which a first selected element is integral with a part of a second selected weighting element.

5. The system as recited in claim 1, further comprising an enclosure over said void space of said club head.

6. The system as recited in claim 5, in which said selectable weighting elements are secured within said void space by bars, bolts, threadable bolts, or slots within a surface defining said void space, channels or foam provided about said weighting elements.

7. The system as recited in claim 1, in which said selectable weighting elements are secured within said void space by bars, bolts, threadable bolts, or slots within a surface defining said void space, channels or foam provided about said weighting elements.

8. In a virtual X, Y, Z orthonormal coordinate system in which a sole portion of a golf club is substantially congruent with a bottom-most XY plane thereof, in which a face plate of said club intersects a forward-most XZ plane of said system, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to an increase in height above said bottom-most XY-plane, a golf club adjustment system, comprising:

- (a) a club head having a void space behind said face portion of said club and above said sole portion thereof, said void space substantially conformal in geometry and volume to that of said club head;
- (b) a golfer replaceable weighting element substantially within said void space between a higher Y, higher Z coordinate, to minimize ballooning, to a lower Y, lower Z coordinate to maximize said ballooning; and
- (c) a golfer replaceable weighting element substantially within said void space between a lower X-coordinate, to compensate for hook, to a higher X-coordinate to compensate for slice,

wherein at least one of said weighting elements is not contiguous with any inner surface of said void space.

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9. The system as recited in claim 8, further comprising:

(d) at least one of the following weighting elements, in which a selected value of X, Y or Z does not include a value of Y used in said weighting element (b), said at least one element comprising:

- (i) a weighting element, substantially within said void space, between a lower Y, lower Z coordinate, to increase backspin, to a higher Y, higher Z coordinate to decrease backspin; or
- (ii) a weighting element substantially within said void space, between a lower Z-coordinate to increase trajectory to a higher Z-coordinate to decrease trajectory.

10. The system as recited in claim 9, in which any selected value of Y of said element (d) is not contiguous with any part of said face plate.

11. The system as recited in claim 9, in which said weighting element of at least one selected element is non-uniform along at least one of said X, Y or Z axes.

12. The system as recited in claim 8, in which said weighting element of said at least one of said elements (b) or (c) is non-uniform along one or more of said X, Y and Z axes.

13. The system as recited in claim 8, in which a first selected element is integral with a second selected element.

14. The system as recited in claim 13, in which said selectable weighting elements are secured within said void space by bars, bolts, threadable bolts, or slots within a surface defining said void space, channels or foam provided about said weighting elements.

15. The system as recited in claim 8, further comprising: an enclosure over said void space of said club head.

16. The system as recited in claim 8, in which said selectable weighting elements are secured within said void space by

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bars, bolts, threadable bolts, or slots within a surface defining said void space, channels or foam provided about said weighting elements.

17. A system for adjusting the performance of a golf club including a golf club head having a center of gravity and to which a virtual X,Y,Z orthonormal coordinate system may be applied such that a sole portion of a golf club substantially congruent with a bottom-most XY plane thereof, in which a face plate of said club intersects a forward-most XZ plane of said system, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to an increase in height above said bottom-most XY plane, the system comprising:

(a) at least one void space within said club head, said void space substantially conformal in geometry and volume to that of said club head; and

(b) user-replaceable weighting elements for adjusting said center of gravity about a plane defined by $Y=aZ$ of said club head by increasing a mass of said weighting elements at a point within said plane defined by $Y=aZ$, where a is a scalar number,

wherein at least one of said weighting elements is not contiguous with any inner surface of said void space.

18. The system as recited in claim 17, further comprising: weighting elements for further adjusting said center of gravity along said X-axis of said club head by increasing an amount of mass at a point along said X-axis within said void space.

* * * * *



US007854667C1

(12) **INTER PARTES REEXAMINATION CERTIFICATE** (994th)**United States Patent**
Gillig(10) **Number:** **US 7,854,667 C1**(45) **Certificate Issued:** ***Nov. 12, 2014**(54) **METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM**(75) Inventor: **John P. Gillig**, Pompano Beach, FL (US)(73) Assignee: **Triple Tee Golf, Inc.**, Pompano Beach, FL (US)**Reexamination Request:**

No. 95/002,052, Jul. 20, 2012

Reexamination Certificate for:

Patent No.: **7,854,667**
 Issued: **Dec. 21, 2010**
 Appl. No.: **11/588,992**
 Filed: **Oct. 27, 2006**

(*) Notice: This patent is subject to a terminal disclaimer.

Related U.S. Application Data

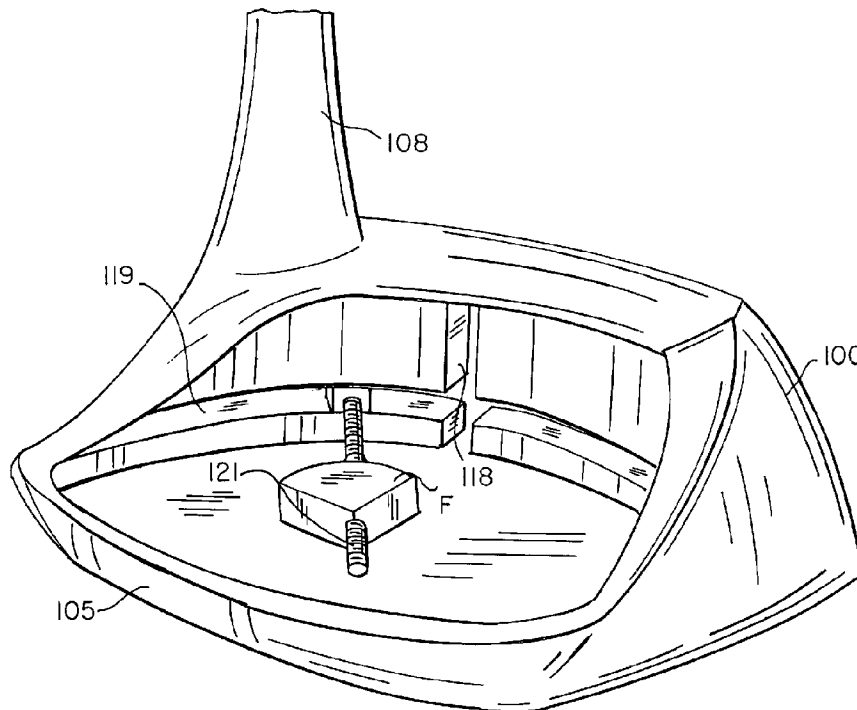
- (63) Continuation-in-part of application No. 10/818,899, filed on Apr. 3, 2004, now Pat. No. 7,128,660, which is a continuation-in-part of application No. 10/383,532, filed on Mar. 10, 2003, now abandoned, which is a continuation-in-part of application No. 09/849,522, filed on May 7, 2001, now Pat. No. 6,530,848.
- (60) Provisional application No. 60/205,250, filed on May 19, 2000.

(51) **Int. Cl.**
A63B 53/06 (2006.01)(52) **U.S. Cl.**
USPC **473/334; 473/345; 473/349**(58) **Field of Classification Search**
USPC **473/334, 335, 345, 349**
See application file for complete search history.(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 95/002,052, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Matthew C. Graham(57) **ABSTRACT**

The performance of a golf club is enhanced through the provision of a void space behind a face plate and above a sole portion, to decrease club weight and provide single, or combinations, of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space and entire club. The weighted coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration hook or slice, and ballooning may be modified through the use of definable combinations of weighting strategies and sub-strategies.



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**INTER PARTES
REEXAMINATION CERTIFICATE
ISSUED UNDER 35 U.S.C. 316**

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THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

AS A RESULT OF REEXAMINATION, IT HAS BEEN
DETERMINED THAT:

10

Claims **1-18** are cancelled.

* * * * *

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7
8 **UNITED STATES DISTRICT COURT**
SOUTHERN DISTRICT OF CALIFORNIA

9
10 TRIPLE TEE GOLF, INC., a Florida
Corporation

11 Plaintiff,

12 v.

13 TAYLOR-MADE/ADIDAS, a Delaware
Corporation

14 Defendant.
15

Case No. '11CV2974 WQHWVG

**PLAINTIFF'S ORIGINAL
COMPLAINT FOR
INFRINGEMENT OF U.S.
PATENT NOS. 7,128,660 AND
7,854,667 UNDER 35 U.S.C.
§271(a); 35 U.S.C. §271(b); and 35
U.S.C. §271(c)**

(DEMAND FOR JURY TRIAL)

16
17 **COMES NOW** Plaintiff TRIPLE TEE GOLF, INC., by and through undersigned
18 counsel, and hereby alleges as follows:

19 **NATURE OF THE ACTION**

20 1. This is a patent infringement action to stop Defendant's infringement of
21 Plaintiff's United States Patent Nos. 7,128,660 (the '660 patent) and 7,854,667 (the '667
22 patent), both entitled "Method of Golf Club Performance Enhancement and Articles
23 Resultant Therefrom", copies of each of which are attached hereto as Exhibits A and B.
24 The inventions of said patents allow golfers to change the center of gravity of a
25 substantially hollow golf club head by moving selectable combinations of adjustable
26 weights within the club head, thereby effecting different launch and flight conditions of
27 the golf ball.

28 //

Complaint

[WP\111219 Complaint (F).wpd]

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7 **UNITED STATES DISTRICT COURT**
8 **SOUTHERN DISTRICT OF CALIFORNIA**
9

10 TRIPLE TEE GOLF, INC., a Florida
11 corporation,

12 Plaintiff,

13 vs.

14
15 TAYLOR-MADE/ADIDAS,
16

17 Defendant.
18

CASE NO. 11-CV-2974 JLS (WVG)

**ORDER GRANTING JOINT
MOTION TO STAY PENDING
REEXAMINATION OF THE
PATENTS-IN-SUIT**


(ECF No. 26)

19 Presently before the Court is a joint motion brought by the parties to stay the litigation in
20 this action pending an *inter partes* reexamination of the patents-in-suit. (ECF No. 26.) Good
21 cause appearing, the parties' joint motion is **GRANTED**.

22 **IT IS HEREBY ORDERED** that all proceedings in this action are stayed pending a final
23 decision by the United States Patent and Trademark Office (USPTO), exclusive of appeals, in the
24 *inter partes* reexaminations of the patents-in-suit.

25 **IT IS SO ORDERED.**

26 DATED: July 25, 2012

27 
Honorable Janis L. Sammartino
United States District Judge
28

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15 Attorneys for Plaintiff:
16 TRIPLE TEE GOLF, INC.

17 UNITED STATES DISTRICT COURT
18 SOUTHERN DISTRICT OF CALIFORNIA

19 TRIPLE TEE GOLF, INC., a Florida
20 Corporation,

21 Plaintiff,

22 v.

23 TAYLOR-MADE/ADIDAS, a
24 Delaware corporation,

25 Defendant.

Case No. 3:11-CV-2974 JLS-WJV

Judge: Hon. Janis L. Sammartino
Magistrate Judge: Hon. William V. Gallo

**PLAINTIFF'S FIRST AMENDED
COMPLAINT FOR PATENT
INFRINGEMENT OF U.S.
PATENT NO. 7,128,660
UNDER 35 U.S.C. §271(a);
35 U.S.C. §271(b); and
35 U.S.C. §271(c)**

(DEMAND FOR JURY TRIAL)

LAW OFFICES OF SEPEHR DAGHIGHIAN, P.C.
433 NORTH CAMDEN DRIVE, FOURTH FLOOR
BEVERLY HILLS, CALIFORNIA 90210

1 **COMES NOW** Plaintiff TRIPLE TEE GOLF, INC., by and through
2 undersigned counsel, and hereby alleges as follows:

3 **NATURE OF THE ACTION**

4 1. This is a patent infringement action to stop Defendant's
5 infringement of Plaintiff's United States Patent Nos. 7,128,660 (the '660
6 patent) entitled "Method of Golf Club Performance Enhancement and Articles
7 Resultant Therefrom", copies of the '660 patent and Certificates of Re-
8 Examination of which are attached herewith as Exhibits A and B. The
9 inventions of said patent allow golfers to change the center of gravity of a
10 substantially hollow golf club head by moving selectable combinations of
11 adjustable weights within the club head, thereby effecting different launch,
12 flight conditions of the golf ball and its trajectory.

13 **SUBJECT MATTER JURISDICTION AND VENUE**

14 2. This action arises under the Patent Laws of the United
15 States, 35 U.S.C. §§1 et seq., including 35 U.S.C. §§ 271 and 281-285.

16 3. This Court has jurisdiction under 28 U.S.C. §§1331 and
17 1338 (a), and 35 U.S.C. 271.

18 4. Venue is proper in this judicial district pursuant to 28 U.S.C.
19 §1391(b)(2), §1391(c) and §1400(b) in that Plaintiff is informed and believes
20 that Defendant is headquartered in, and regularly does business in, this judicial
21 district, and it is therefore deemed to reside therein.

22 **THE PARTIES**

23 5. Plaintiff, TRIPLE TEE GOLF, INC. ("Plaintiff") is a Florida
24 corporation situated in Pompano Beach, Florida 33069.

25 6. Plaintiff is informed and believes, and alleges on that basis,
26 that Defendant Taylor-Made/Adidas Golf Company Inc. ("Defendant") is a
27 Delaware corporation with its principal place of business in Carlsbad,
28 California and is a subsidiary of Adidas A.G., in Germany. Various distributors

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1 and agents of Defendant are resident throughout California and the United
 2 States. Defendant therefore has at least minimum contacts with this District.

3 **GENERAL ALLEGATIONS**

4 7. The Plaintiff has previously advised Defendant of the '660
 5 patent which it holds, sufficiently to satisfy the notice requirements of 35
 6 U.S.C. 287(a), and by expressly offering to Defendant a license under said
 7 patent and its related patent including the '660 patent. Defendant has declined
 8 such a license.

9 8. Plaintiff is the holder of all right, title and interest to said
 10 '660 patent ("the Patent").

11 9. Upon information and belief, Defendant designs, assembles,
 12 markets, distributes to entities that sell to the public, makes, uses, imports,
 13 offers for sale and sells products that infringe, directly or indirectly Plaintiff's
 14 Patent as re-examined on June 12, 2014.

15 9A. The Patent, as re-examined, does not enlarge the scope of, nor
 16 substantively change, the originally issued '660 Patent or its claims. As such, under
 17 35 U.S.C. 252, the patent remains enforceable from its date of grant in 2006 until its
 18 expiration in 2020.

19 10. Plaintiff is informed and believes that Defendant and its
 20 agents have engaged in a long-standing course of dealings in supplying
 21 products in the golf industry which are sold, distributed and used in California
 22 and throughout the United States.

23 11. Plaintiff is informed and believes that the products alleged
 24 to be infringing herein were and are distributed from and into this judicial
 25 district from abroad by Defendant, and were offered for sale and sold by
 26 Defendant from this judicial district since about the year 2005.

27 12. Plaintiff is informed and believes that Defendant is subject
 28 to personal jurisdiction of this Court under Fed. R. Civ. P. 4

- 3 -

13. Defendant's infringements of Plaintiff's patent include, but are not limited to, various models of Defendant's award winning golf products known as the Taylor-Made R5, R7, R7 Quad and Super Quad, R7 Limited, R7 CGB, R7 425, R7 460, R9, R9 TP, and R11 drivers and related golf clubs including so-called M W T fairway woods, and Rescue clubs. Due largely to those products, Defendant, since about 2006, has held the largest share of the U.S. market in golf head driver sales, enabling Defendant's golfing operations to exceed \$1 billion per annum in revenue since 2006.

14. Defendant knew or should have known of Plaintiff's rights in the '660 patent, which was published September 30, 2004. At the very least, reasonable investigation would have revealed that the subject matter was and is proprietary to Plaintiff.

14A. Defendant R5, R7, R9 and other clubs infringe the Patent by reason of their structures which enable the end user to practice methods of modification of golf club performance to control hook and slice, launch angle, ball penetration, backspin, trajectory, and ballooning.

15. At least in light of Plaintiff's communications with Defendants of 2007 through 2009, its actions have been knowing and willful since that time.

COUNT I (DIRECT PATENT INFRINGEMENT)

16. Plaintiff hereby incorporates the allegations of Paragraphs 1 through 15, as though fully set forth herein.

17. Plaintiff is the owner the Patent and has complied with the provisions of the United States Patent Laws at 35 U.S.C. §1 et seq. with respect to them.

18. Plaintiff has not authorized Defendant to make, use, offer for sale, sell to the public or import products infringing, directly or indirectly, Plaintiff's Patent.

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1 19. Plaintiff is informed and believes, and based thereon alleges
2 that Defendant has infringed the Patent by, among other things, making, using,
3 importing, advertising, offering for sale to the public, selling products that, when
4 used, infringe Plaintiff's Patent as re-examined, including without limitation,
5 said R5, R7, R9 and R11 golf clubs, without Plaintiff's permission or authority,
6 and thereby has and is directly infringing the Patent under 35 U.S.C. 271(a).

7 20. Plaintiff has suffered damages in an amount subject to proof
8 at trial, but in no event less than a reasonable royalty relative to Defendant's
9 infringing sales revenues, under 35 U.S.C. §284.

10 21. On information and belief, Defendant knew or should have
11 known of Plaintiff's exclusive rights in the patented method and structure at the
12 time the infringing activity began in that the '660 patent was published in 2004.
13 Nevertheless, Defendant proceeded to knowingly and willfully disregard
14 Plaintiff's rights and to infringe Plaintiff's Patent. Plaintiff is therefore entitled
15 to an amount which is treble the amount of Plaintiff's damages found or
16 assessed.

17 22. Based on Defendant's willful infringement, Plaintiff believes
18 this to be an "exceptional" case which entitles Plaintiff to attorney's fees
19 pursuant to 35 U.S.C. §285.

20 23. Defendant has caused, and continues to cause, irreparable
21 injury to Plaintiff by infringement of Plaintiff's Patent.

22 **COUNT II (INDUCEMENT OF PATENT INFRINGEMENT)**

23 24. Plaintiff hereby incorporates the allegations of Paragraphs 1
24 through 1 and 21 above, as though fully set forth herein.

25 25. Plaintiff is the owner of the Patent. Plaintiff has complied
26 with the provisions of the United States patent laws at 35 U.S.C. §1 et seq. with
27 respect to said Patent.

28 26. Plaintiff has not authorized Defendant to induce others to

- 5 -

LAW OFFICES OF SEPEHR DAGHIGHIAN, P.C.
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BEVERLY HILLS, CALIFORNIA 90210

1 make, use methods, offer for sale, sell, or import products that use methods
2 infringing Plaintiff's Patent.

3 27. Plaintiff is informed and believes, and based thereon alleges,
4 that Defendant has infringed the Patent by actively inducing its agents,
5 distributors, and end users, among others, to employ products that infringe the
6 method of Plaintiff's Patent without Plaintiff's permission or authority, in
7 violation of 35 U.S.C. 271(b).

8 28. Plaintiff has suffered damages in an amount subject to proof
9 at trial, but in no event less than a reasonable royalty under 35 U.S.C. §284
10 regarding revenues of Defendant's infringing sales since the date of publication
11 of the '660 patent in 2004.

12 29. On information and belief, Defendant knew or should have
13 known of Plaintiff's exclusive rights in the Patent during the time the
14 infringing activity occurred. Nevertheless, Defendant proceeded knowingly
15 and willfully without regard for Plaintiff's rights, to induce others downstream
16 in commerce to directly infringe Plaintiff's patent. Plaintiff is therefore
17 entitled to an amount up to treble the amount of Plaintiff's damages found or
18 assessed due to such acts and Defendant should not be allowed to take any
19 deduction from their revenue in computing damages which should be
20 disgorged and awarded to Plaintiff.

21 29A. Plaintiff is informed and believes, and based thereon alleges,
22 that Defendant has infringed the Patent by, among other things, selling one or
23 more articles or materials such as weight adjustment guides, booklets, videos
24 and tools, which enable infringement of the patented method of the Patent,
25 especially such materials adapted for use in the infringement of Plaintiff's
26 Patent that are not staple articles of commerce, this without Plaintiff's
27 permission or authority, in violation of 35 U.S.C. 271(c).
28

1 30. Based on Defendant's willful infringement, Plaintiff believes
2 this to be an "exceptional" case which entitles Plaintiff to attorney's fees
3 pursuant to 35 U.S.C. §285.

4 31. Defendant has caused, and continues to cause, irreparable
5 injury to Plaintiff by inducement of others to infringe Plaintiff's patent.

6 **COUNT III (CONTRIBUTORY PATENT INFRINGEMENT)**

7 32. Plaintiff hereby incorporates the allegations of Paragraphs 1
8 through 15, and 21 above, as though fully set forth herein.

9 33. Plaintiff is the owner of the Patent. Plaintiff has complied
10 with the provisions of the United States Patent Laws at 35 U.S.C. §1 et seq.
11 with respect to the patent.

12 34. Plaintiff has not authorized Defendant to make, use, offer for
13 sale, sell or import products infringing Plaintiff's Patent as re-examined.

14 35. Plaintiff is informed and believes, and based thereon alleges,
15 that Defendant has infringed the Patent by, among other things, selling one or
16 more articles or materials such as weight adjustment guides, booklets, videos
17 and tools, which enable infringement of the patented method of the Patent,
18 especially such materials adapted for use in the infringement of Plaintiff's
19 Patent that are not staple articles of commerce, this without Plaintiff's
20 permission or authority, in violation of 35 U.S.C. 271(c).

21 36. Plaintiff has suffered damages in an amount subject to proof
22 at trial, but in no event less than a reasonable royalty under 35 U.S.C. §284
23 regarding Defendant's infringing sales revenues.

24 37. On information and belief, Defendant knew of Plaintiff's
25 exclusive rights in the patent at the time the infringing activity occurred.
26 Nevertheless, Defendant proceeded knowingly and willfully in disregard of
27 Plaintiff's rights, to contribute to the infringement by others of Plaintiff's
28 Patent. Plaintiff is therefore entitled to an amount due to such acts up to treble

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1 the amount of Plaintiff's damages found or assessed and Defendant should not
2 be allowed to take any deductions from their revenue in computing profits
3 which should be disgorged and awarded to Plaintiff.

4 38. Based on Defendant's willful infringement, Plaintiff
5 believes this to be an "exceptional" case which entitles Plaintiff to attorney's
6 fees pursuant to 35 U.S.C. §285.

7 39. Defendant has caused, and continues to cause, irreparable
8 injury to Plaintiff by contributing to infringement of Plaintiff's Patent.

9 **PRAYER FOR RELIEF**

10 Plaintiff prays that judgment be entered in its favor and against
11 Defendant as follows:

12 1. For damages in accordance with 35 U.S.C. §284, including
13 actual damages, and in no event less than a reasonable royalty regarding
14 Defendant's revenues and those of its agents from infringing sales revenues and
15 of other revenue conveyed thereby, consequential of Defendant's infringement
16 under 35 U.S.C. 271(a), (b) and/or (c).

17 2. For an award of up to treble the amount of damages found
18 and assessed under 35 U.S.C. §284;

19 3. That the Court find this to be an exceptional case and award
20 Plaintiff its attorney's fees pursuant to 35 U.S.C. §285;

21 4. For an accounting and injunctive relief prohibiting future
22 patent infringement by Defendant and its agents;

23 5. For interest from the date of commencement of infringement
24 in about 2005;

25 6. For costs of this suit;

26 7. For such other and further relief as this Court deems just and
27 proper.
28



US007128660B2

(12) **United States Patent**
Gillig(10) **Patent No.:** **US 7,128,660 B2**
(45) **Date of Patent:** **Oct. 31, 2006**(54) **METHOD OF GOLF CLUB PERFORMANCE
ENHANCEMENT AND ARTICLES
RESULTANT THEREFROM**(75) Inventor: **John P. Gillig**, Pompano Beach, FL
(US)(73) Assignee: **Elizabeth P. Gillig Revocable Trust**,
Duxbury, MA (US)(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

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(21) Appl. No.: **10/818,899**(22) Filed: **Apr. 3, 2004**(65) **Prior Publication Data**
US 2004/0192466 A1 Sep. 30, 2004**Related U.S. Application Data**(63) Continuation-in-part of application No. 10/383,532,
filed on Mar. 10, 2003, now abandoned, which is a
continuation-in-part of application No. 09/849,522,
filed on May 7, 2001, now Pat. No. 6,530,848.(60) Provisional application No. 60/205,250, filed on May
19, 2000.(51) **Int. Cl.**
A63B 53/00 (2006.01)
A63B 53/04 (2006.01)(52) **U.S. Cl.** **473/324**; 473/409; 473/334;
473/340; 473/345(58) **Field of Classification Search** 473/324-350,
473/290-291, 409
See application file for complete search history.(56) **References Cited****U.S. PATENT DOCUMENTS**

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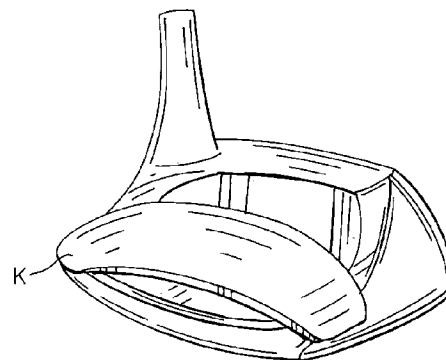
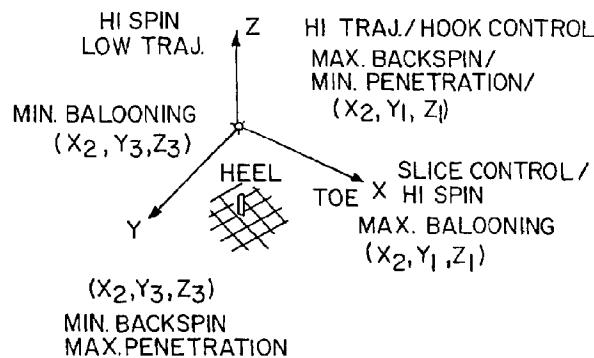
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USA, 1995, pp. 15-24, n/a, Tideist and Foot Joy Worldwide, USA.*Primary Examiner*—Sebastiano Passaniti(74) *Attorney, Agent, or Firm*—Melvin K. Silverman; Yi Li(57) **ABSTRACT**

The performance of a golf club may be enhanced through the provision of a void space behind a face plate and above the sole plate, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space. The weighting coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration and hook or slice may be modified through the use of a definable weighting strategy.

19 Claims, 11 Drawing Sheets

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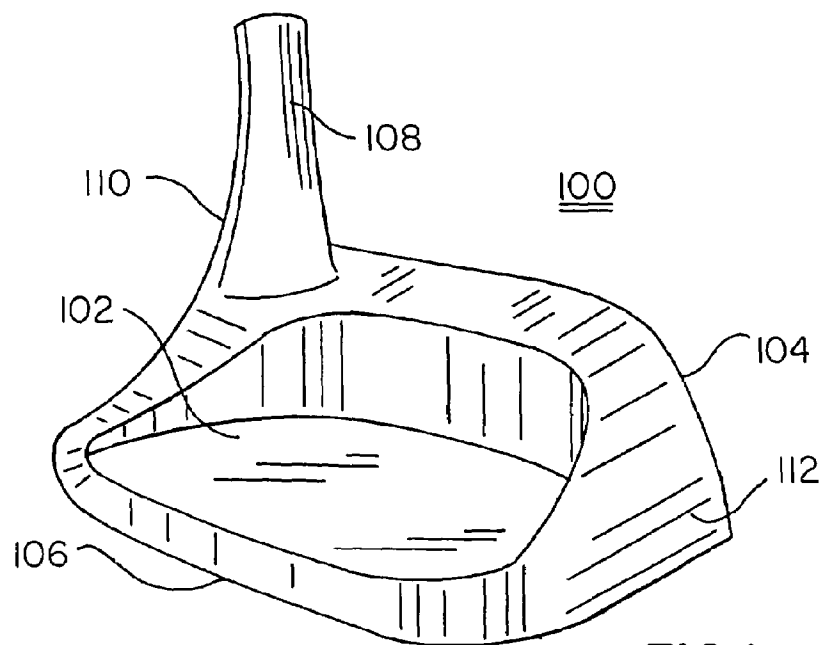


FIG. 1

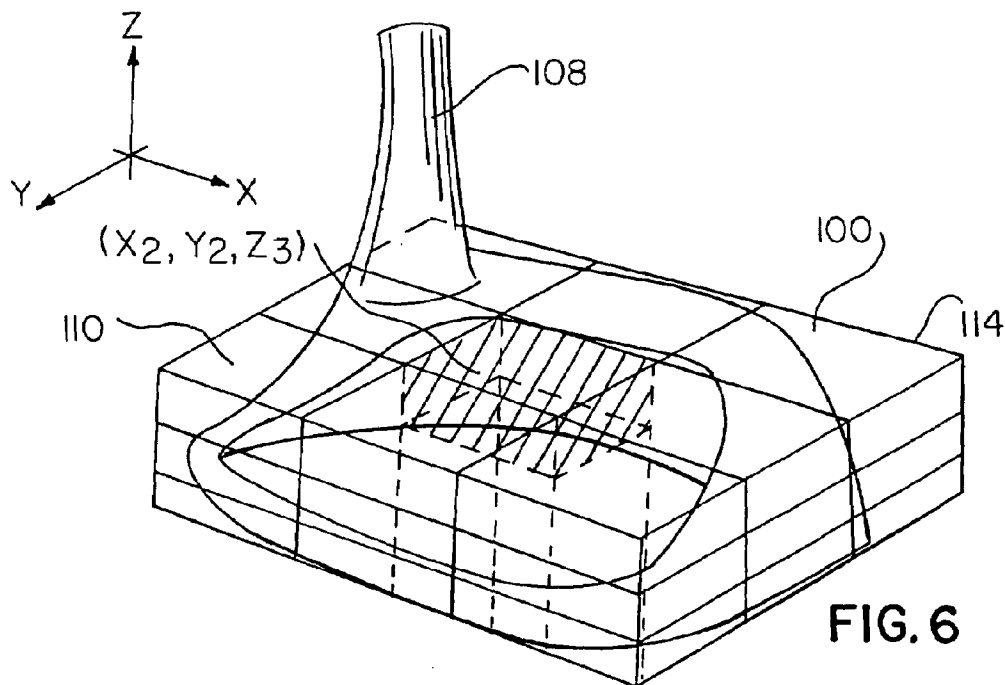


FIG. 6

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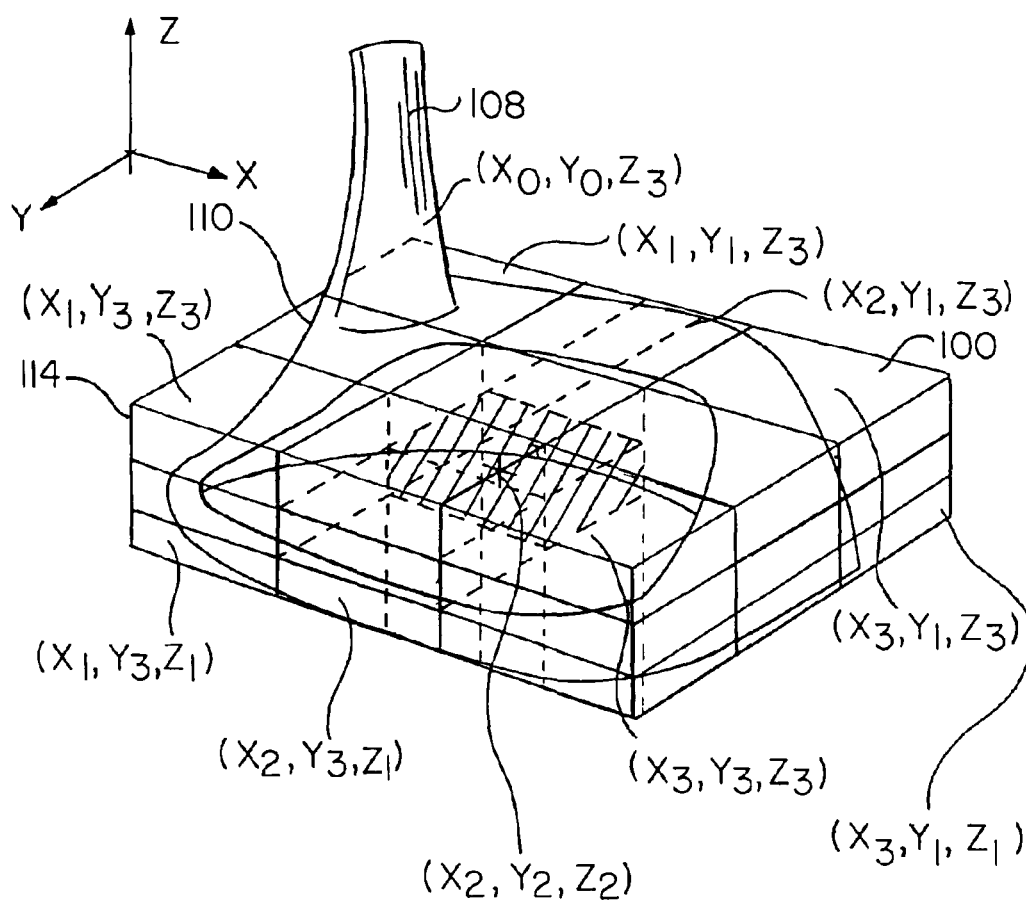


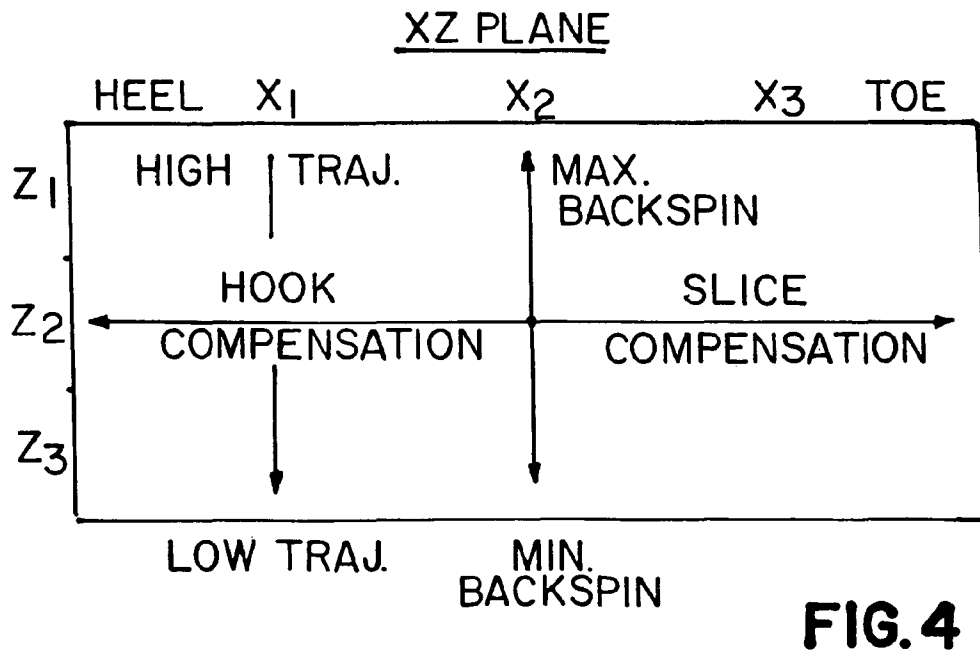
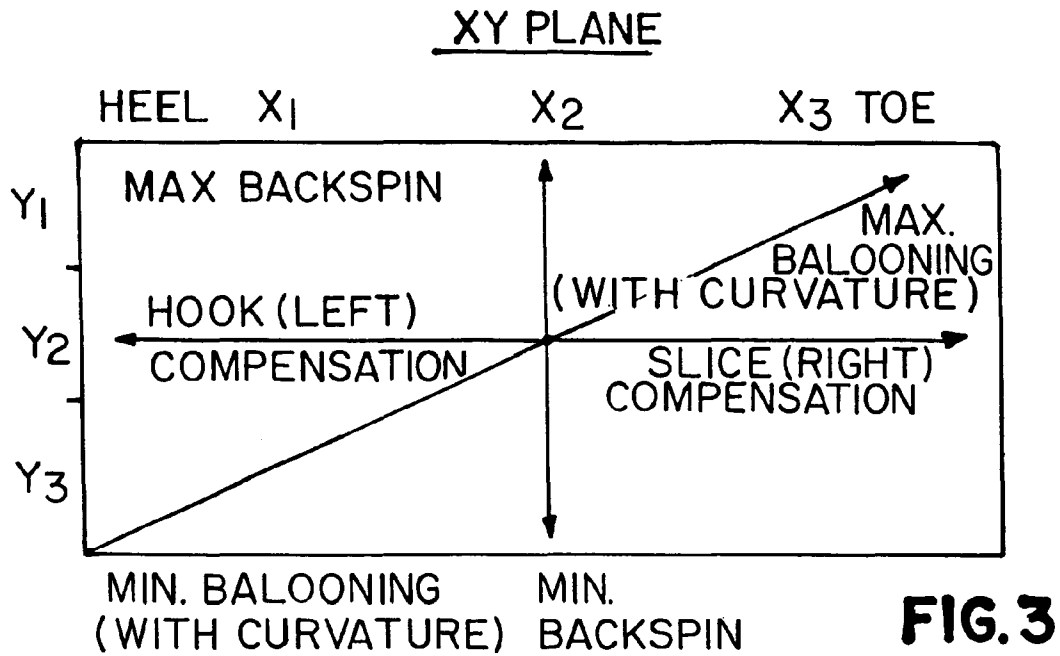
FIG. 2

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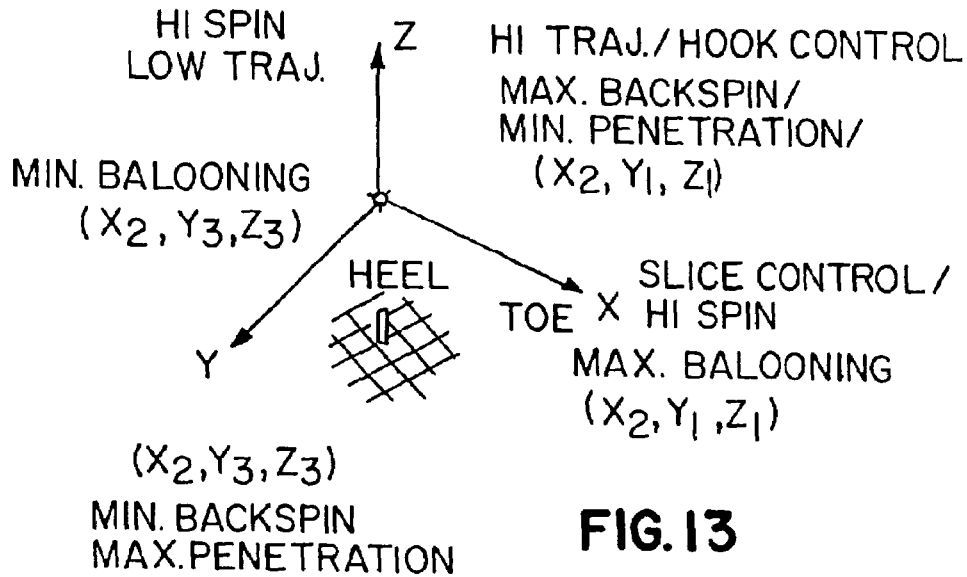


FIG. 13

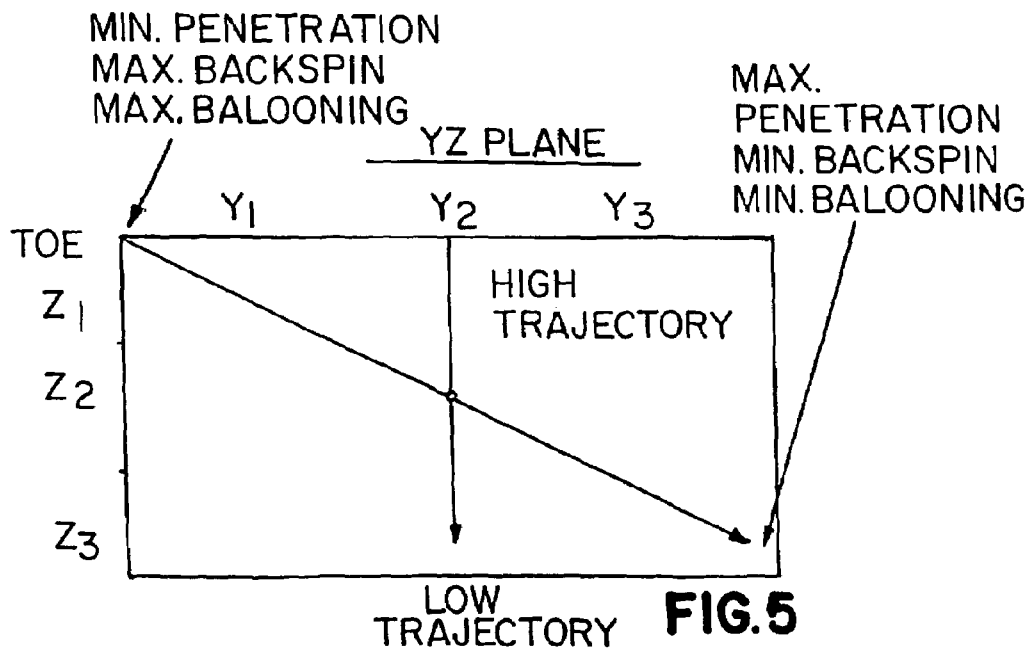


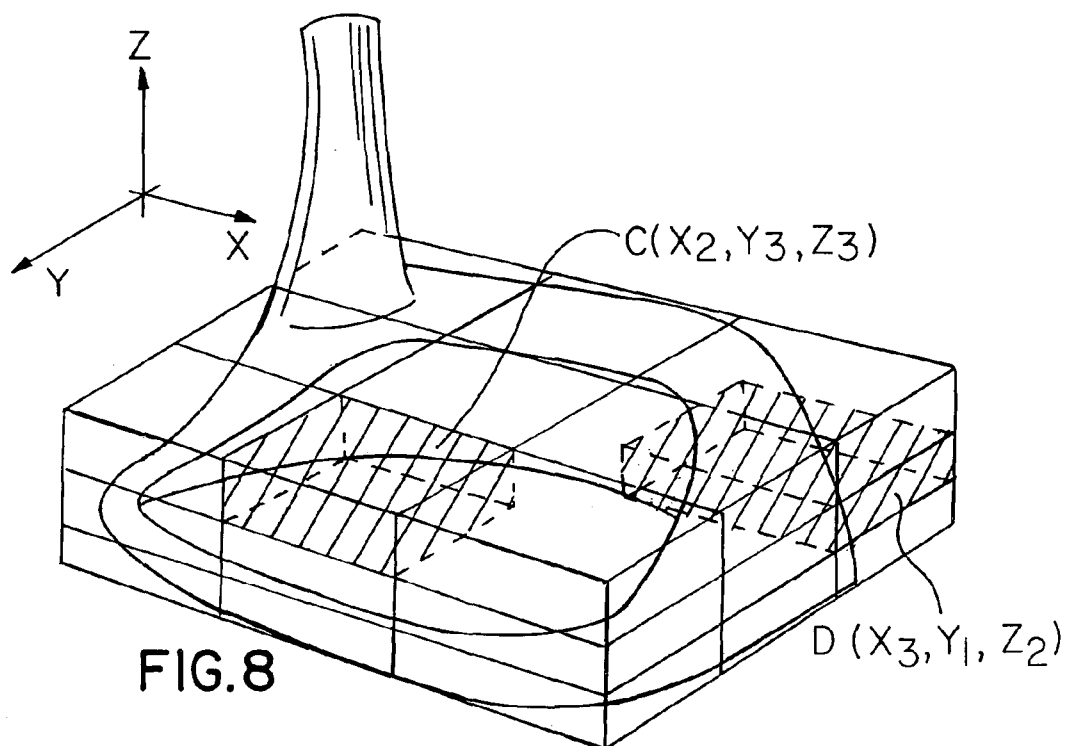
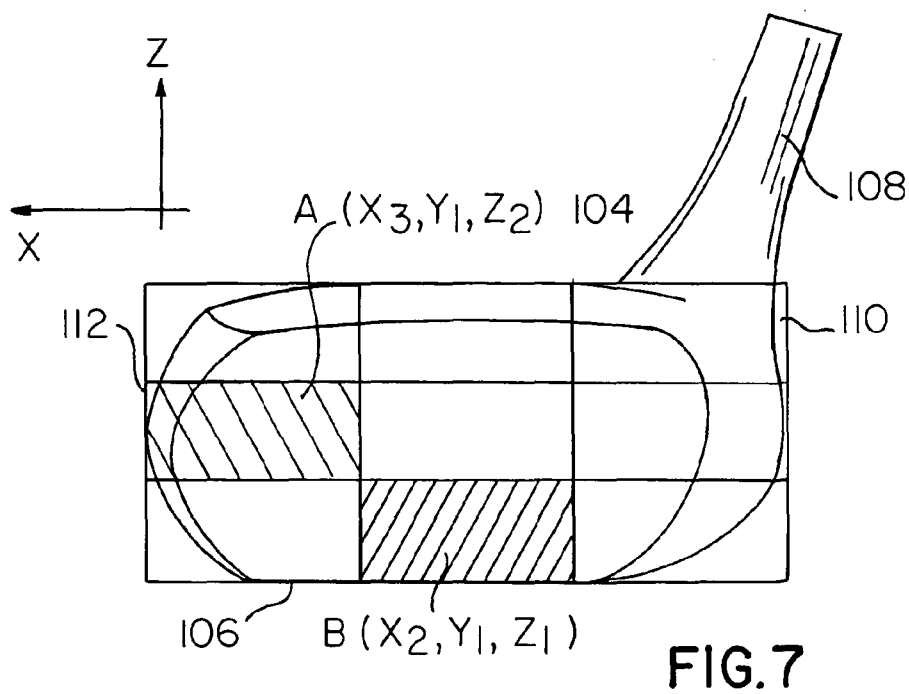
FIG. 5

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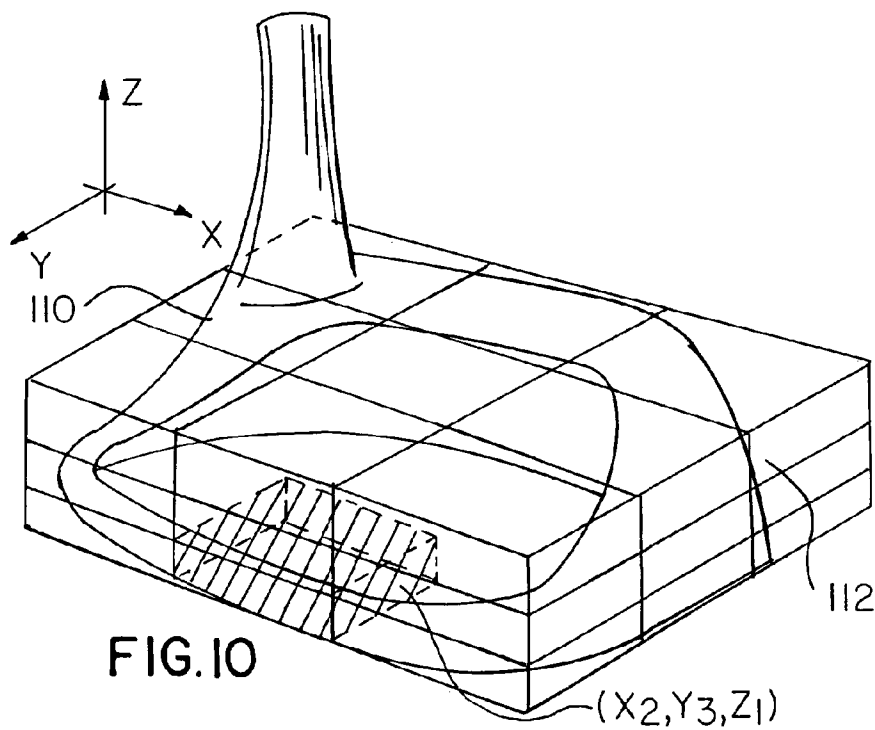
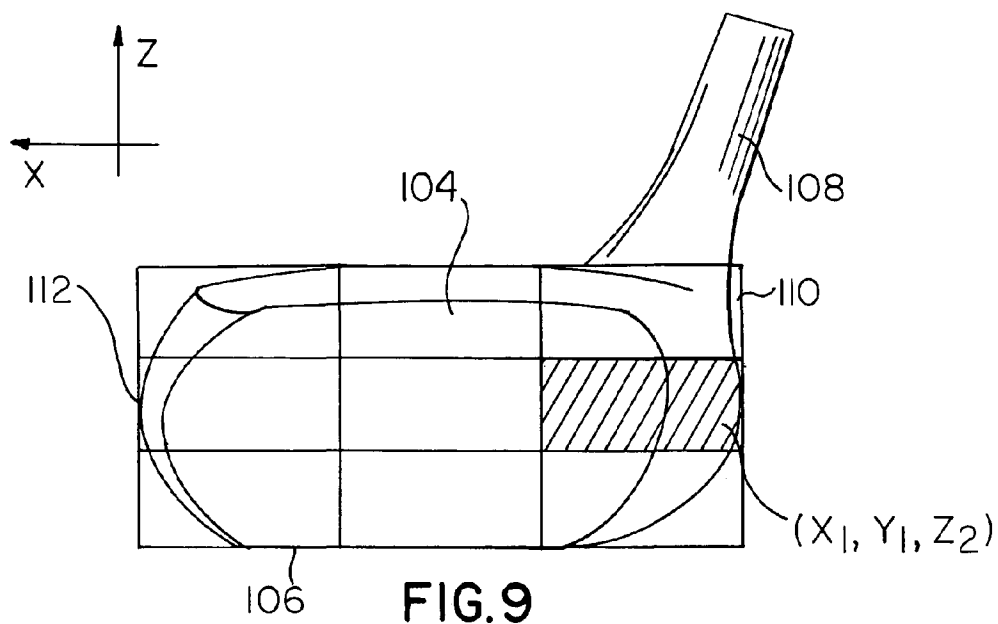


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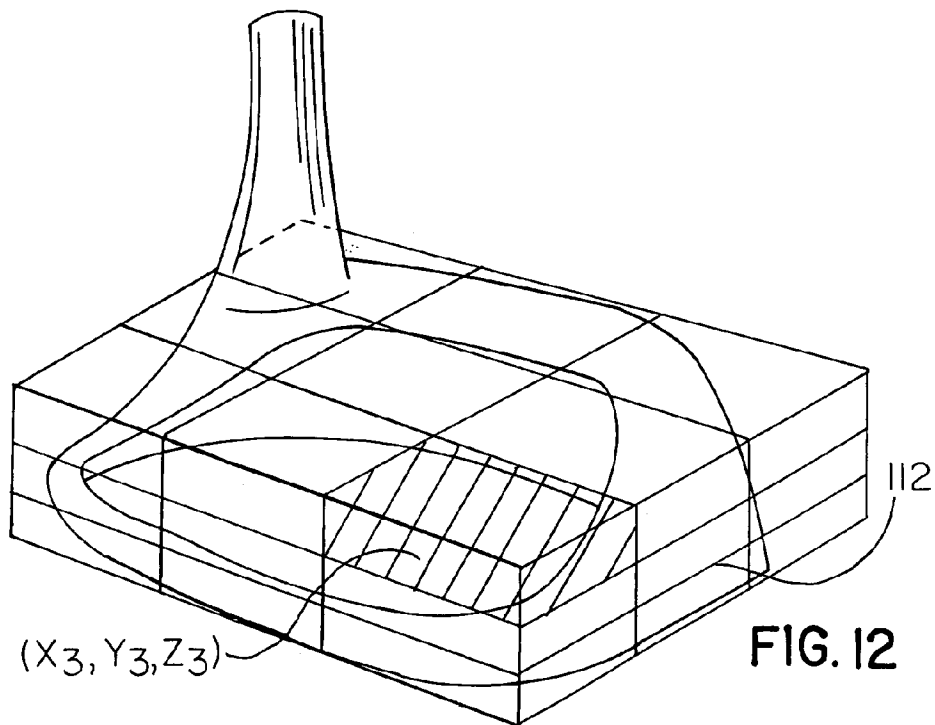
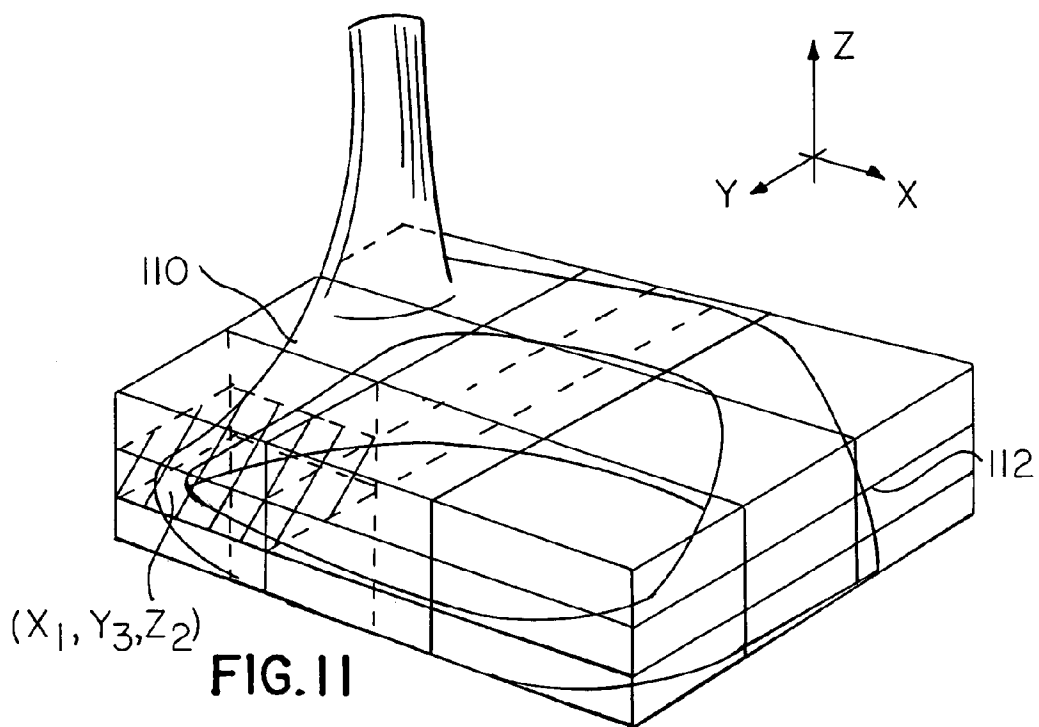


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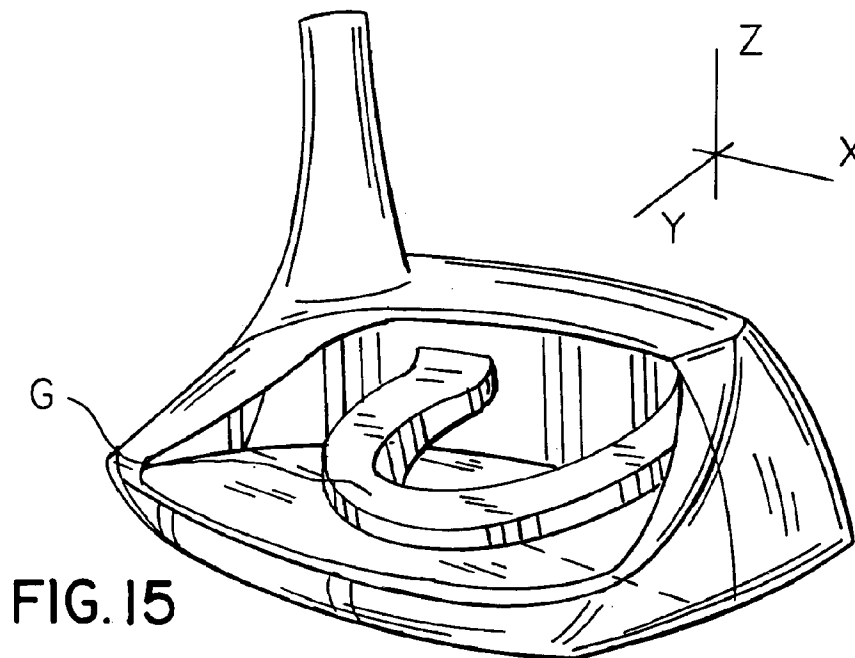
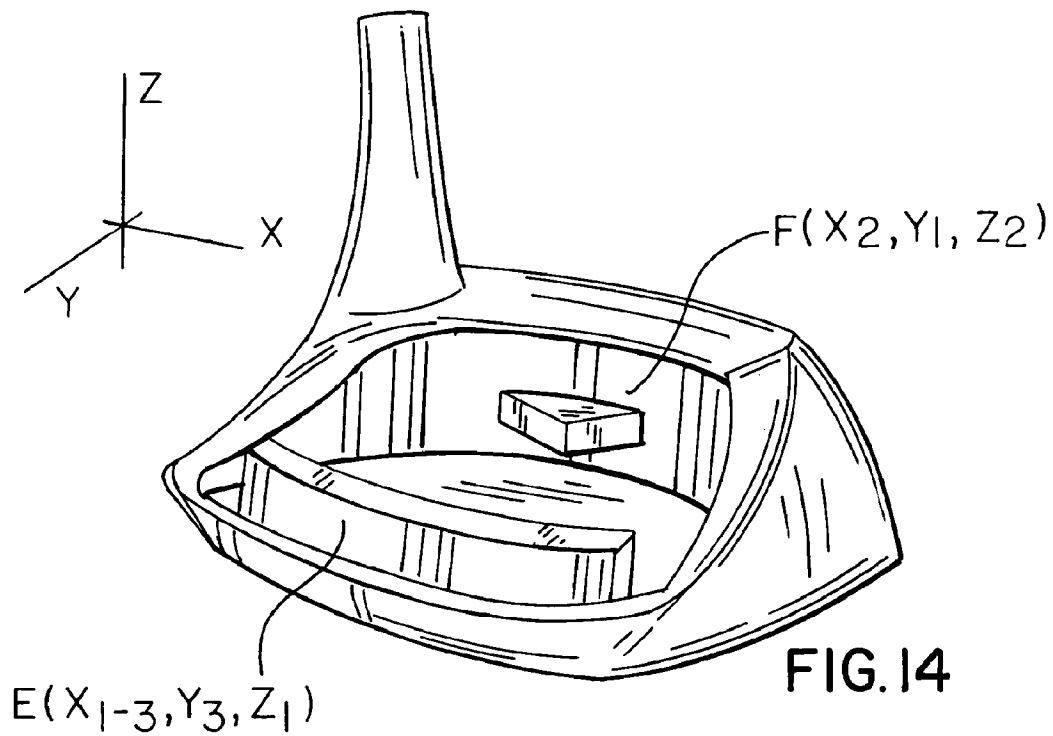


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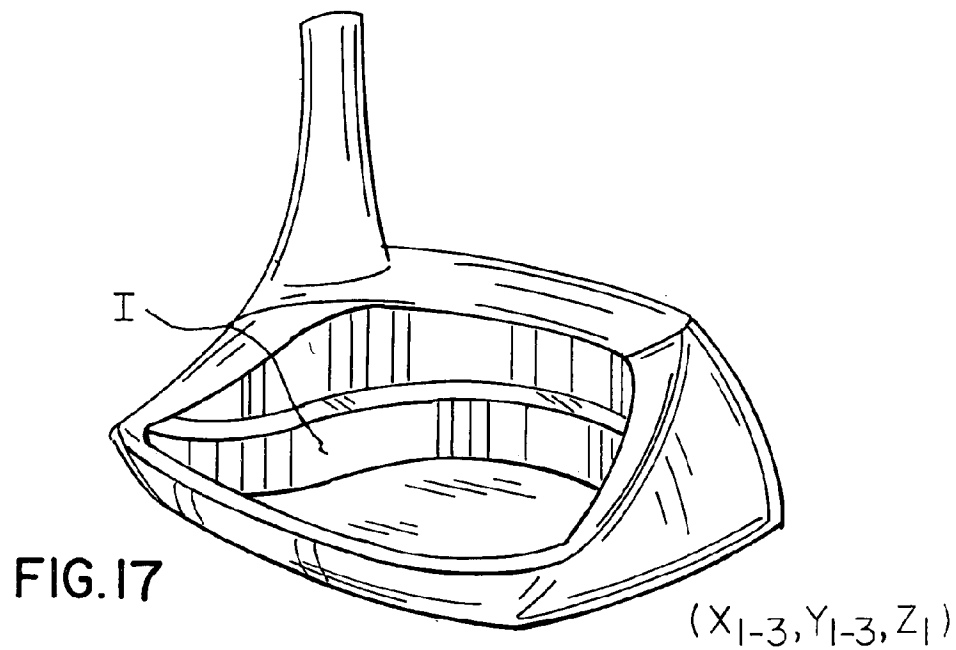
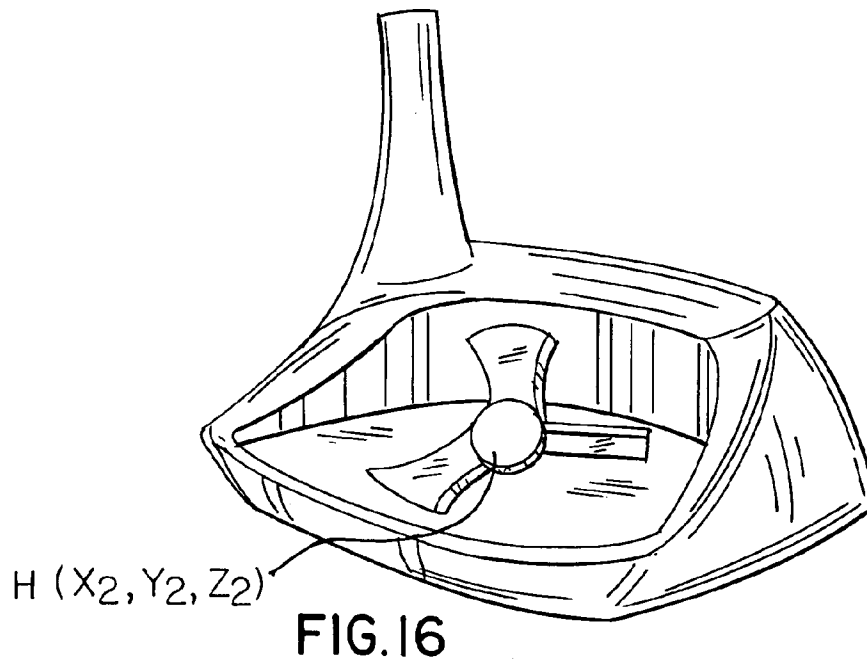


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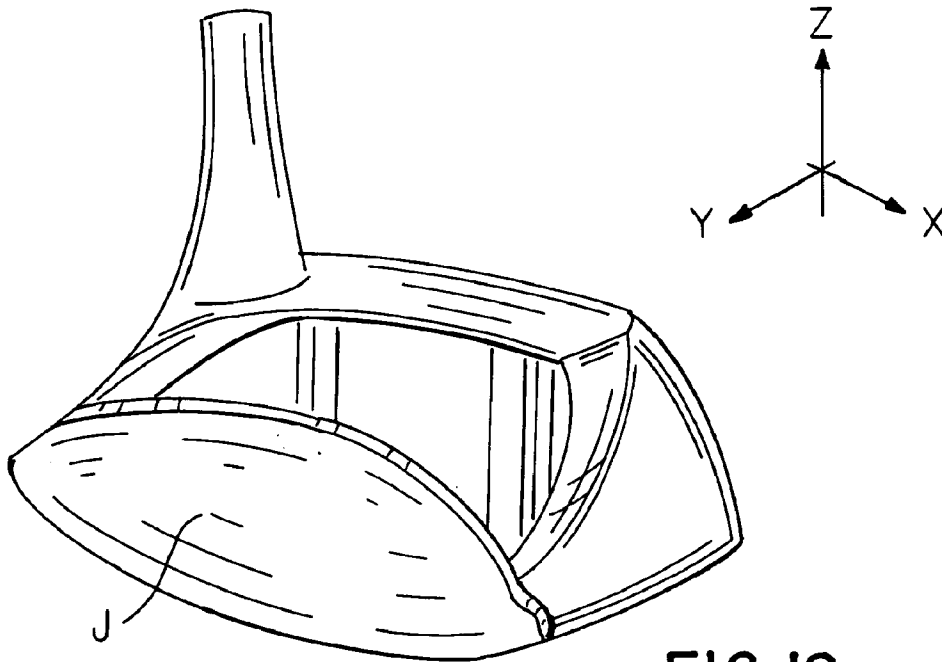


FIG. 18

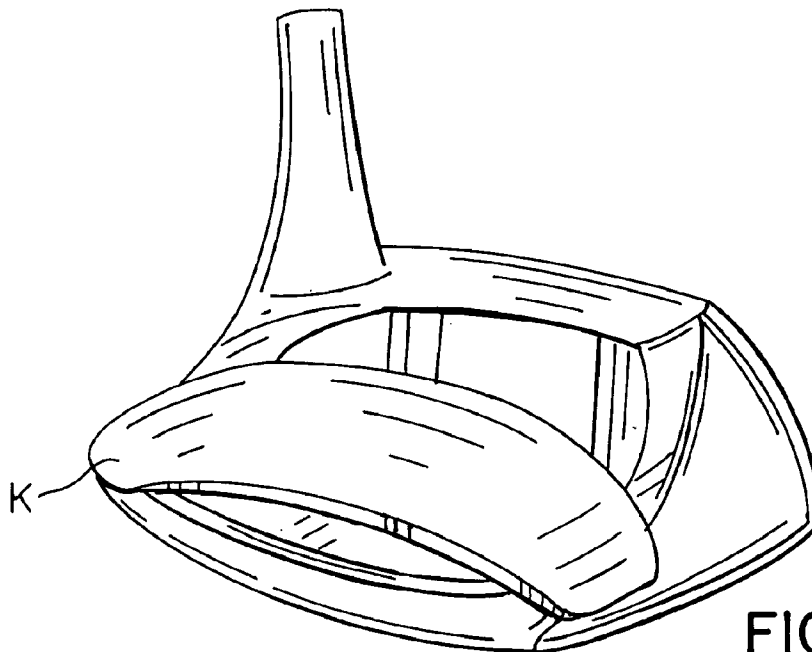


FIG. 19

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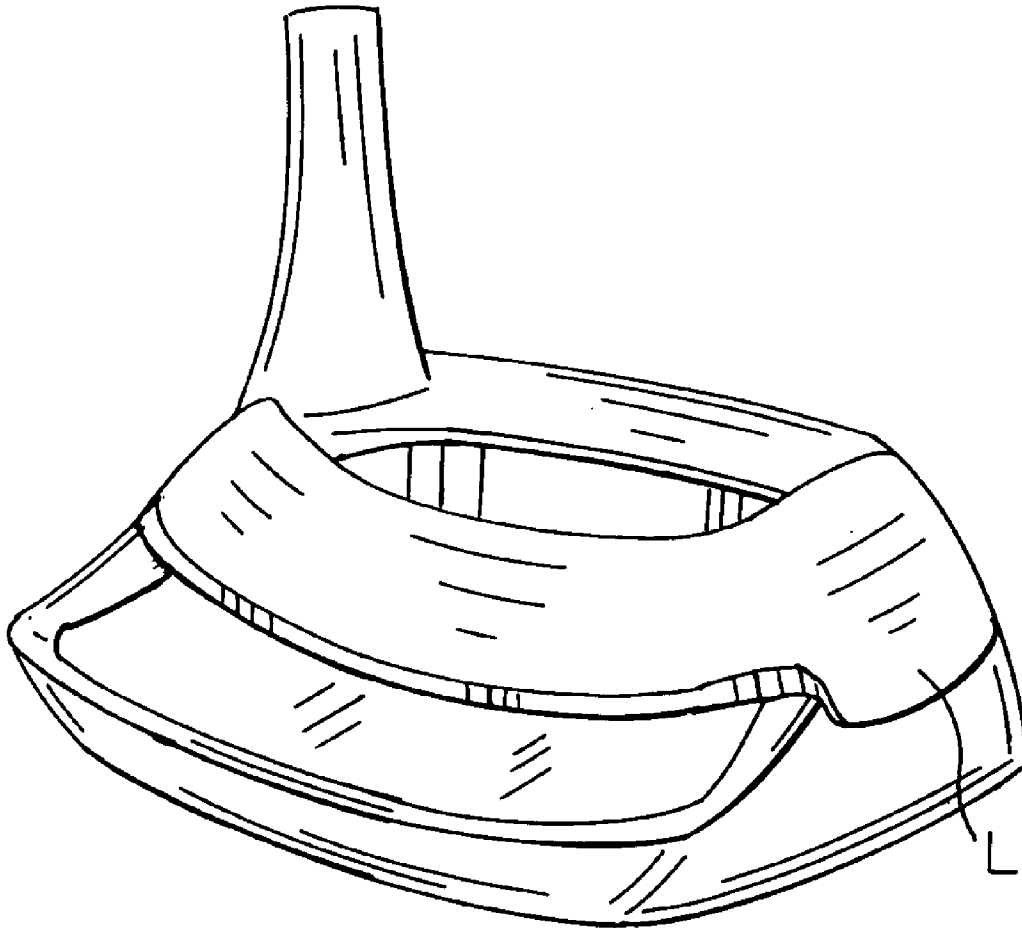


FIG. 20

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METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM

REFERENCE TO RELATED APPLICATIONS

This is a continuation-in-part of application Ser. No. 10/383,532, entitled Multi-purpose Golf Club, filed Mar. 10, 2003, now abandoned and the same is incorporated herein by reference, which is a continuation-in-part of application Ser. No. 09/849,522, now U.S. Pat. No. 6,530,848, which is a utility conversion of Provisional Patent application No. 60/205/250, filed May 19, 2000. Each of said applications are incorporated by reference herein.

BACKGROUND OF THE INVENTION

A. Area of Invention

The invention relates to a method of selectably varying the center of gravity and distribution of weighting in a void space in the head of a golf club.

B. Prior Art

Golfing enthusiasts appreciate the dynamic characteristics of golf irons and woods and the manner in which performance of the same will vary as a consequence of physiologic characteristics of a particular golfer. Such physiologic factors will affect a variety of ball strike parameters including, without limitation, loft trajectory, inertial spin, range hook and slice.

My issued U.S. Pat. No. 6,530,848 (2003) sets forth the use of weighting options for the center of gravity ("CG") of a club resultant from a substantial hollowing out of or void space in a top or predominant portion of the club head, as a manufacturing step. Said void space teaches the significance of placement of the position of a weight within such hollowed-out portion to effect a variety of ball strike and flight characteristics including increase or decrease of clockwise spin, counterclockwise spin and back spin of the ball so propelled by the golf club. Said patent further sets forth the variability of a weight element to adjust the weight of the golf club to induce a more desirable ball spin to thereby accomplish an improved trajectory of ball flight.

Use of a cavity within the upper surface of a putter type golf club in to vary the weight or balance of the heel, toe and bottom portions of a putter club head, and certain uses of weights therein, is recognized in U.S. Pat. No. 5,683,307 (1997) to Rife, entitled Putter Type Golf Club Head with Balance Weight Configuration and Complementary Ball Striking Face. U.S. Pat. No. 3,841,640 (1974) to Gaulocher, entitled Golf Putter, reflects a rudimentary recognition of the importance of proper weighting within the head of a golf putter to compensate for physiologic needs and preferences of a golfer. Such approaches in the prior art have attempted to address one or another problem associated with the golf strike characteristics or, in some cases, the characteristics of the golf range surface. As is well known, golfing greens are replete with imperfections which affect ball speed, spin and roll. Accordingly, a wide range of both ball flight and ground surface performance factors can be attributed to weight distribution and position of the CG within the club head.

U.S. Pat. No. 4,909,029 (1990) to Sinclair employs an upper void space to modify the aerodynamics of the head of the golf ball.

The present inventive method reflects my discovery that many more options for positioning of the CG and distribution of weight or weights within the head of a golf club, whether that club comprises an iron, a wood, or a hybrid

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thereof, in positioning, behind the club face, selectable high density weighting elements at coordinates of an orthonormal matrix up to 27 potential locations in a void space, to thus compensate for physiologic imperfections in one or more characteristic of the swing of a golfer. The angulation and curvature of the club face relative to said matrix provides a yet further performance enhancing parameter that co-acts with weight elements within said matrix.

Published U.S. Specification US 2003/0199331A1 teaches use of a re-positionable weight chip in a golf club to modify club performance.

SUMMARY OF THE INVENTION

The performance of golf club heads made of wood, plastic, metal, and composites thereof may be enhanced through the provision of a void space behind a face plate and above the sole portion, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix within said void space. Said coordinates are provided as a function of ball strike, flight analysis and physiologic or computerized observation of the golf strike swing. In a basic embodiment, ball flight may be affected by varying the mass of a selectable sole portion which may be uniformly or variably weighted from the club hosel to toe end. Weight of uniform or non-uniform distribution may also selectably be provided within the void space behind the face plate and above the fixed sole portion. The angle and curvature of the face plate may also be varied.

The inventive method more particularly comprises a method of golf club performance enhancement, the method comprising the steps of (a) provision of a void space behind a face plate of said club and above a sole portion thereof; and (b) in a virtual X, Y, Z orthonormal coordinate system in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion, the steps of selectably employing at least two of the following club weighting strategies: (i) to modify backspin, providing within said void space, weighting means at a low Y, low Z coordinate to increase backspin or at a high Y, high Z coordinate to decrease backspin; (ii) to modify ball penetration, providing within said void space weighting means at a high Y, high Z coordinate to maximize penetration or at a low Y, low Z coordinate to minimize penetration; (iii) to modify ball trajectory, modifying weighting means within said void space at a low Z-coordinate to increase trajectory or at a high z-coordinate to decrease trajectory; and (iv) to compensate for bait hook or slice, providing weighting means within said void space at a low X-coordinate to compensate for hook or a high X-coordinate to compensate for slice.

It is accordingly an object of the invention to provide a golf club having a weight modifiable club head, inclusive of interchangeable sole plates and/or weighting elements, which express a universal method of golf club head modification to account for ball backspin, penetration, trajectory, and hook or slice.

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It is another object to provide a wooden, plastic or metal golf club having a head with a hollowed out portion behind the face plate and above a uniform or non-uniform sole plate.

It is a further object of the invention to provide a golf club head with a hollowed-out void space, made during production, to a golfer's preference, and further providing a modifiable sole plate, with or without addition integral or added weights selectable positioned in volumetric coordinates of a virtual matrix about said void space.

It is a further object to provide a club head, modified with a hollow interior and having selectable point, axis, vector distributed linear or non-linear weights which may be inserted or removed to suit particular preferences, needs and physiologic requirements of a golfer.

It is a yet further object of the invention to provide improved elements and arrangements thru a method of providing an inexpensive, durable and effective means of compensating for ball spin, ball flight trajectory, ball spin and golf course surface variables.

The above and yet other objects and advantages of the present invention will become apparent from the hereinafter set forth Brief Description of the Drawings, Detailed Description of the Invention, and Claims appended herewith.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the head of a golf club configured for the practice of the present inventive method and products thereof.

FIG. 2 is an illustration of a virtual three-dimensional orthonormal matrix by which the inventive method may be practiced.

FIG. 3 is a graph-type illustration a golf club performance parameters which may be effected by weighting within the xy plane of said orthonormal matrix.

FIG. 4 is a graph showing the golf performance parameters which may be influenced by weighting within the xz plane of said matrix.

FIG. 5 is a graph showing the club performance characteristics which may be influenced by weighting within the yz plane of said matrix.

FIG. 6 is an illustration of a weighting of a club head of the type of FIG. 1 at a (X2, Y2, Z3) coordinate of said matrix.

FIG. 7 is a front plan view of the club of FIG. 1 showing weighting at x3, Y1, Z2 coordinate and at a (X2, Y1, Z1) coordinate.

FIG. 8 is a view, similar to that of FIG. 6, however showing weighting of the club of FIG. 1 at a (X2, Y3, X3) coordinate and at the (X3, Y1, Z2) coordinate.

FIG. 9 is a view, similar to that of FIG. 7, however showing weighting at a (X1, Y1, Z1) coordinate.

FIG. 10 is a view, similar to that of FIG. 6, however showing weighting at a (X2, Y3, Z1) position.

FIG. 11 is a view similar to that of FIG. 6, however showing weighting at a (X1, Y3, Z2) coordinate.

FIG. 12 is a view, similar to that of FIG. 6, however showing weighting of the club head at a (X3, Y3, Z3) coordinate of the orthonormal matrix.

FIG. 13 is a three-dimensional graph showing the effect of weighting at different combinations of the X, Y, and Z coordinates of the orthonormal matrix and the parametric results of such weighting.

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FIG. 14 is a view of a club head of the type of FIG. 1, however showing the use of multiple weights across multiple coordinates.

FIG. 15 is a view, the use of a horse shoe weighting element to broaden the sweet spot and to achieve other modifications of ball flight performance.

FIG. 16 is a view showing the use of a propeller type weighting element to modify golf club performance.

FIG. 17 is a view in which a strip-like element is used to modify club performance.

FIG. 18 illustrates the use of a clip-on element to achieve particular modifications of golf strike and ball flight characteristics.

FIG. 19 shows a further snap-on element to provide different performance characteristics.

FIG. 20 shows a yet further snap-on weighting element for the modification of ball strike characteristics.

DETAILED DESCRIPTION OF THE INVENTION

With reference to the perspective view of FIG. 1, there is shown a golf club head 100 modified from the shape of more conventional golf club heads through the provision of a void space 102 behind a face plate 104 above a sole plate portion 106 of the club head 100. Also shown in FIG. 1 is a golf club hosel 108 which enters the club head at a heel 110 of the club. Located oppositely to heel 110 is club toe 112.

In FIG. 2 is shown an orthonormal matrix 114 which surrounds the club 100, and is defined by an X, Y and Z coordinate system corresponding to the three essential axes of the club, shown to the upper left of FIG. 2. Said X, Y and Z axes of said orthonormal matrix 114 provide for a 3x3x3 system of 27 volumetric coordinates. Therein, the position (X₀, Y₀, and Z₃) defines the location at which hosel 108 enters club head 100. The (X2, Y2, Z2) position, shown in shading in FIG. 2, represent the center of gravity of the club and is consistent with a normal or standard flight of the golf ball. In other words, a golfer having a perfect golf swing would, in accordance with the present system, apply a weighting element to a club head, of the type of club head 100, at position (X2, Y2, Z2) of the matrix shown therein. For ease of reference in the figures which follow, applicable coordinate nomenclature for various positions

In the charts of FIGS. 3-5 are shown the XY, XZ and YZ coordinate relationships which affect particular parameters of ball strike, path, trajectory and rotation which are of interest to golfers. More particularly, shown in FIG. 3 is the effect of different types of weighting within the XY plane of orthonormal matrix 112, that is, the horizontal plane thereof. Therein, weighting in the +X or toe direction will increase the loft or ballooning of flight path of the golf ball, so that +X weighting direction of the club will provide for slice (right curvature) compensation of the golf ball. Conversely, weighting toward the heel or in the -X direction will provide for hook (left curvature) compensation. FIG. 3 also indicates that maximum backspin of the ball may be achieved by weighting at a low y position, that is, at the plane of the face plate, while minimum back spin may be accomplished through weighting toward the rear of the club, this corresponding to the Y3 position.

With reference to FIG. 4, one may note that hook or slice compensation, as in FIG. 3, remains a function of the weighting along the X-axis. In the XZ plane which is a vertical plane co-parallel with club hosel 108, trajectory may be controlled as a function of position of weighting upon the z-axis, that is, the lowest z-axis position (Z1) will afford the

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highest trajectory, whereas the highest z-axis position (Z3) will produce the lowest trajectory of ball flight.

Backspin of the ball is also a function weighting along the Z-axis. As may be noted by the line at the middle of FIG. 4, the Z1 position will produce a maximum spin of the ball, while weighting at Z3 will produce a minimum backspin. Accordingly, viewing FIGS. 3 and 4 in combination, it may be appreciated that a minimum backspin may be achieved by weighting at the (X2, Y3, Z3) coordinate, while maximum backspin may be achieved by weighting at the (X2, Y1, Z1) coordinate, as will also be illustrated in the figures which follow.

With reference to FIG. 5, this chart corresponds to the YZ plane which is a vertical plane substantially parallel with toe face 110 of the club (see FIGS. 2 and 6).

From FIG. 5, it may be noted that minimum penetration, that is, maximum apex of ball flight, is achieved at the (Y1, Z1) position, while maximum penetration is achieved at the (Y3, Z3) position. Further, the highest trajectory may be seen to exist at the (Y2, Z1) position, while the lowest trajectory is achieved at the (Y2, Z3) position. Minimum backspin is achieved at (Y3, Z3) and maximum backspin at (Y1, Z1).

With the above in mind, the weighting coordinate (X2, Y2, Z3), which is shown in FIG. 6, should be appreciated as one that does not provide for either hook or slice compensation but which provides for reduced trajectory (flatter path of ball flight) and some decrease in backspin due to the Z3 part of the coordinate shown.

In FIG. 7 are shown two different weighting coordinates, both within the Y1 axis which includes the plane of face plate 104 of the club head. More particularly, a weighting element A shown to the left of FIG. 7 is the (X3, Y1, Z2) position and affords neutral ballooning, slice compensation, and some additional backspin. In distinction, weighting element B of coordinate (X2, Y1, Z1) provides for high trajectory, maximum backspin and minimum penetration.

With reference to FIG. 8, weighting element C (coordinate X2, Y3, Z3) provides for low trajectory, minimum backspin and maximum penetration, while element D of FIG. 8 provides for neutral ballooning of ball flight, slice (right curvature) compensation and medium trajectory.

With reference to the weighing element at (X1, Y1, Z2) shown in FIG. 9, such an arrangement will provide for neutral ballooning, hook compensation, slightly additional backspin and medium trajectory.

The weighting element (X2, Y3, Z1) shown in FIG. 10 affords high trajectory, high backspin and high penetration, although not as high penetration as would exist were the weighting at the (X2, Y3, Z3) position.

Shown in FIG. 11 is a weighting element at the (X2, Y3, Z2) position. Thereby, there is achieved hook compensation, high penetration and, no change in the ball's natural trajectory.

In the weighting scheme shown in FIG. 12, that is, weighting at the (X3, Y3, Z3) coordinate position, one achieves slice compensation, decreased backspin, low trajectory and maximum penetration.

Three-dimensional relationships of the above-described parameters of backspin, penetration, trajectory and ballooning are illustrated in FIG. 13. It may be appreciated that ballooning control occurs primarily as a function of the X-axis, as does hook and slice compensation, while maximum backspin occurs as a function of weighting at the (Y1, Z1) position with minimum backspin occurring with weighting at the (Y3, Z3) position. Penetration is also a function of the combined effect of two axes, that is, maximum penetra-

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tion occurring with weighting at the (Y3, Z3) position and minimum penetration occurring with weighting at the (Y1, Z1) coordinate.

In FIG. 14 is shown the use of weights E and F in two different areas of the golf club 100 of FIG. 1. Therein, a good player would move weight E to the back of the club to achieve as penetrating a shot as he could, and would also position weight F to reduce the spin, putting an additional weight in the X-axis center (X2) of the club. This makes the sweet spot smaller, that is, the player must strike the ball right in the center (X2). That is, an ideal strike which would result in a best transference of energy. However, it causes a largest margin of error. Such a golfer therefore would have to be a rather good player to move to the center of the face where he wants to hit the ball. Said weight E also maximizes penetration.

In FIG. 15 is shown the effect of a horse shoe-like structure G, symmetric about the YZ plane at the X2 position. This helps the basic or average player. Such a player moves the weight toward the heel and the toe 112 to make his sweet spot as wide as possible. Structure G also moves the weight down toward the back to get some height on the ball, and also to get more penetration to pick-up some distance. This would be a club for a basic, standard player who simply needs some help that is not interested in slice hook combination. It's just addressing trajectory and spin rate.

With reference to FIG. 16, there is shown the use of a propeller type weight H, having its center at (X2, Y2, Z2), which would be used if one were hitting the ball a bit to the left and low. To compensate for that, the weight is moved to the left, so that the ball will move to the right. To counteract the moving the weight to the left, one may place a projection of the weight H down toward the right hand corner to get the ball up into the air again, and to also move another projection to the rear for penetration and movement up in the air.

With reference to FIG. 17, there is shown the use of a saddle-like weighting element I inserted along the sides and behind the face plate. The benefits of such a weighting geometry are that the weight is set to hit the ball a little higher because the weight is low. It also tends to give it a bit more of penetration, because the weight is moved back. By also moving it to the left, one pushes the ball out to the right, tending to give a shot slightly to the right and is penetrating, but yet will have some spin on it. So it starts out low, goes right and then slows down.

The following charts relate to weighting coordinates to figures, by planes of the orthonormal matrix.

CHART 1

(xy plane)			
	X1 (heel)	X2	X3 (toe)
Y ₁	FIG. 9	FIG. 7(B), 14(F)	FIG. 7(A), 8(D)
Y ₂		FIG. 2, 6, 16	
Y ₃	FIG. 11, 14(E)	FIGS. 8(C), 10, 14(E)	FIGS. 10, 14(E)

CHART 2

(xz plane)			
	X1 (heel)	X2	X3 (toe)
Z1 (heel)		FIGS. 7(B), 10, 16	
Z2	FIG. 9, 11	FIG. 2, 14(F)	FIGS. 7(A), 8(D)
Z3		FIGS. 6, 8(C)	FIG. 10

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CHART 3

(yz plane)			
	Y1 (toe)	Y2	Y3
Z1	FIG. 7(B)	FIG. 16	FIG. 10, 14(E)
Z2	FIGS. 7(A), 8(D), 9	FIG. 5	FIG. 11
Z3		FIG. 6	FIG. 8(C), 12

In FIGS. 18–20 are shown the use of clip-on type weighting elements. More particularly, a weighting element J of FIG. 18 moves weight to the rear of the club, thus increasing penetration, while lowering the center of gravity of the club and increasing spin.

In a weighting element K of FIG. 19, weight is not moved back as far, and is raised-up slightly higher than that of element J. This reduces penetration with slightly reduced backspin, the result being a more controllable ball strike.

In FIG. 20, weighting element L provides an elevation of weight, thereby lowering trajectory which also widens the sweet spot, as in element G of FIG. 15. Also, if element L is asymmetric to the right of a YZ plane of symmetry thru location X2, slice compensation is also provided.

It is noted that many of the above functions of the weighting elements may be achieved thru variation in weight and dimension of sole plate 106 (see FIG. 1). For example, if a change in weight is indicated at a (X, Y, Z1) coordinate, a change in weight or weight-distribution in the sole plate will affect the parameters shown in the chart of FIG. 3. Also, as may be noted in FIG. 4, addition or reduction of weight at Z1 will affect trajectory and backspin.

While there has been shown and described the preferred embodiment of the instant invention it is to be appreciated that the invention may be embodied otherwise than is herein specifically shown and described and that, within said embodiment, certain changes may be made in the form and arrangement of the parts without departing from the underlying ideas or principles of this invention as set forth in the Claims appended herewith.

Having thus described my invention what I claim as new, useful and non-obvious and, accordingly, secure by Letters Patent of the United States is:

1. A method of enhancing performance of a golf club, the method comprising the steps of:

(a) providing a void space behind a face plate of said club and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion;

(c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:

(i) to modify backspin, providing within said void space weighting means between a low Y, low Z

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coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin;

(ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;

(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or

(iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice,

thereby enhancing performance of said club.

2. The method as recited in claim 1, in which said selectably club weighting strategies further include the step of:

(v) providing weighting means within said void space at a high Y, high Z coordinate to minimize said ballooning or at a low Y, low Z coordinate to maximize said ballooning.

3. The method as recited in claim 1, in which said weighting means comprises golfer-replaceable elements.

4. The method as recited in claim 2, in which said weighting means comprises golfer-replaceable elements.

5. The method as recited in claim 1, in which said weighting means comprises a weight which is non-uniform along one or more of said X, Y and Z axes.

6. The method as recited in claim 5, in which said weighting means comprises golfer-replaceable elements.

7. The method as recited in claim 5, including:

selection of Step(c)(ii) by securing a strip-like weighting element over said void space at about a (Y2 Y3, Z2) position and spanning all X positions, thereby providing modification of penetration at a medium ball trajectory; and

selection of Step (c)(iv) with regard to the x-axis to compensate for hook or slice.

8. The method of enhancing performance of a golf club as recited in claim 1, in which:

said selectably employing two club weighting strategies further comprising employing three of said strategies.

9. The method of enhancing performance of a golf club as recited in claim 1, in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

10. The method as recited in claim 1, in which a weighting means of a first selected strategy may be integral with that of a second selected strategy.

11. A method of enhancing performance of a golf club, the method comprising the steps of:

(a) providing a void space behind a face plate of said club and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and

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an increase in Z-axis value corresponds to increase in height above said sole portion;
(c) providing weighting means substantially within said void space between a high Y, high Z coordinate to minimize ballooning to a low Y, low Z coordinate to maximize said ballooning; and
(d) providing weighting means substantially within said void space between a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice.
12. The method as recited in claim 11, further comprising the step of:
(e) selectably employing at least one of the following club weighting strategies to said club, in which a selected value of X, Y or Z does not include the value of Y used in Step (c):
(i) to modify backspin, providing within said void space, weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin; or
(ii) to modify ball penetration, providing within said void space weighting means at a high Y, high Z coordinate to maximize penetration or at a low Y, low Z coordinate to minimize penetration; or
(iii) to modify ball trajectory, providing weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory.

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13. The method as recited in claim 12, in which any selected value of Y of Step (c) is not contiguous with any part of said face plate.

14. The method as recited in claim 12, in which said weighting means of at least one strategy is non-uniform along one or more of said X, Y and Z axes.

15. The method as recited in claim 14, including:

selection of Step (e)(ii) by securing a strip-like weighting element over said void space at about a (Y2-Y3, Z2) position and spanning all X positions, thereby providing modification of penetration to medium ball trajectory; and

selection of Step (d) with regard to the X-axis to compensate for hook or slice.

16. The method as recited in claim 11, in which said weighting means comprises golfer-replaceable elements.

17. The method as recited in claim 11, in which said weighting means of at least one strategy is non-uniform along one or more of said X, Y and Z axes.

18. The method as recited in claim 17, in which said weighting means comprises golfer-replaceable elements.

19. The method as recited in claim 11, in which in which a weighting means of a first selected strategy may be integral with that of a second selected strategy.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,128,660 B2
APPLICATION NO. : 10/818899
DATED : October 31, 2006
INVENTOR(S) : John P. Gillig

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On Title Page item (73) Assignee, change

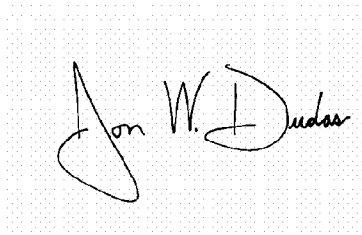
“(73) Assignee: Elizabeth P. Gillig Revocable Trust, Duxbury, MA (US)”

to

--(73) Assignee: Triple Tee Golf, Inc., Pompano Beach, FL (US)--

Signed and Sealed this

Thirty-first Day of July, 2007

A handwritten signature in black ink on a light gray dotted background. The signature reads "Jon W. Dudas" in a cursive, stylized script.

JON W. DUDAS

Director of the United States Patent and Trademark Office

US007128660C1

(12) **INTER PARTES REEXAMINATION CERTIFICATE (712th)****United States Patent****Gillig**(10) **Number:** **US 7,128,660 C1**(45) **Certificate Issued:** **Oct. 24, 2013**(54) **METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM**(58) **Field of Classification Search**
USPC 473/324, 409, 334, 340, 345
See application file for complete search history.(75) **Inventor:** **John P. Gillig**, Pompano Beach, FL (US)(56) **References Cited**(73) **Assignee:** **Triple Tee Golf, Inc.**, Pompano Beach, FL (US)

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 95/002,049, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Reexamination Request:
No. 95/002,049, Jul. 20, 2012**Reexamination Certificate for:**
Patent No.: **7,128,660**
Issued: **Oct. 31, 2006**
Appl. No.: **10/818,899**
Filed: **Apr. 3, 2004***Primary Examiner* — Matthew C. Graham(57) **ABSTRACT**

The performance of a golf club may be enhanced through the provision of a void space behind a face plate and above the sole plate, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space. The weighting coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration and hook or slice may be modified through the use of a definable weighting strategy.

Certificate of Correction issued Jul. 31, 2007

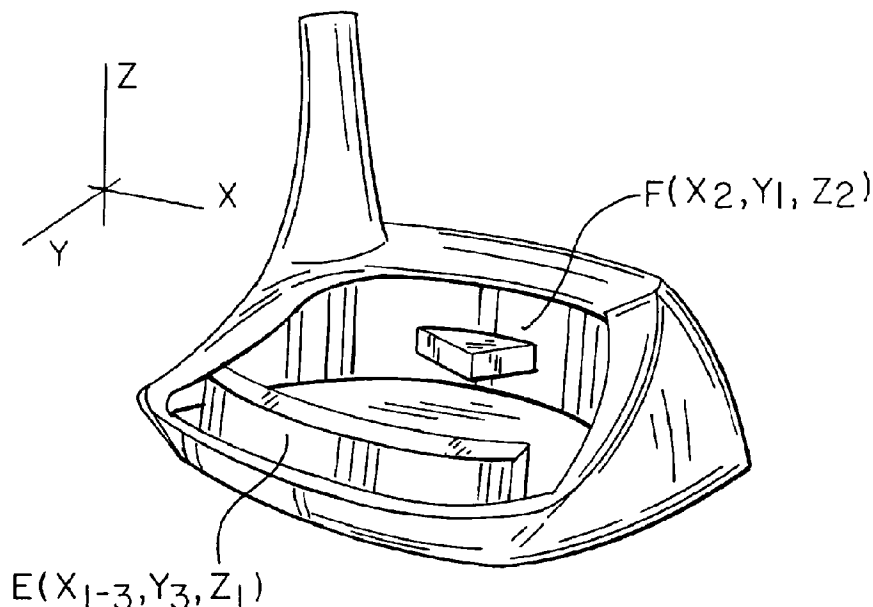
Related U.S. Application Data

(63) Continuation-in-part of application No. 10/383,532, filed on Mar. 10, 2003, now abandoned, which is a continuation-in-part of application No. 09/849,522, filed on May 7, 2001, now Pat. No. 6,530,848.

(60) Provisional application No. 60/205,250, filed on May 19, 2000.

(51) **Int. Cl.**
A63B 53/00 (2006.01)
A63B 53/04 (2006.01)(52) **U.S. Cl.**
USPC **473/324; 473/409; 473/334; 473/340;**
473/345

At the time of issuance and publication of this certificate, the patent remains subject to pending reexamination control number 90/012,788 filed Feb. 6, 2013. The claim content of the patent may be subsequently revised if a reexamination certificate issues from the reexamination proceeding.



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**INTER PARTES
REEXAMINATION CERTIFICATE
ISSUED UNDER 35 U.S.C. 316**

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

**Matter enclosed in heavy brackets [] appeared in the
patent, but has been deleted and is no longer a part of the
patent; matter printed in italics indicates additions made
to the patent.**

ONLY THOSE PARAGRAPHS OF THE
SPECIFICATION AFFECTED BY AMENDMENT
ARE PRINTED HEREIN.

Column 3, line 11:

It is a further object to provide a club head, modified with
a hollow interior and having selectable point, axis, vector *and*
distributed linear or non-linear weights which may be
inserted or removed to suit particular preferences, needs and
physiologic requirements of a golfer.

AS A RESULT OF REEXAMINATION, IT HAS BEEN
DETERMINED THAT:

Claims 1-6, 8, 10-14 and 16-19 are cancelled.

Claims 7, 9 and 15 were not reexamined.

* * * * *

US007128660C2

(12) **EX PARTE REEXAMINATION CERTIFICATE** (10189th)
United States Patent
Gillig

(10) **Number:** **US 7,128,660 C2**(45) **Certificate Issued:** **Jun. 12, 2014**

(54) **METHOD OF GOLF CLUB PERFORMANCE
 ENHANCEMENT AND ARTICLES
 RESULTANT THEREFROM**

(75) **Inventor:** **John P. Gillig**, Pompano Beach, FL (US)

(73) **Assignee:** **Triple Tee Golf, Inc.**, Pompano Beach,
 FL (US)

(51) **Int. Cl.**
A63B 53/00 (2006.01)
A63B 53/04 (2006.01)

(52) **U.S. Cl.**
 USPC **473/324**; 473/334; 473/340; 473/345;
 473/409

(58) **Field of Classification Search**
 USPC 473/335, 345, 349
 See application file for complete search history.

Reexamination Request:

No. 90/012,788, Feb. 6, 2013

Reexamination Certificate for:

Patent No.: **7,128,660**
 Issued: **Oct. 31, 2006**
 Appl. No.: **10/818,899**
 Filed: **Apr. 3, 2004**

Reexamination Certificate C1 7,128,660 issued Oct. 24, 2013

Certificate of Correction issued Jul. 31, 2007

Related U.S. Application Data

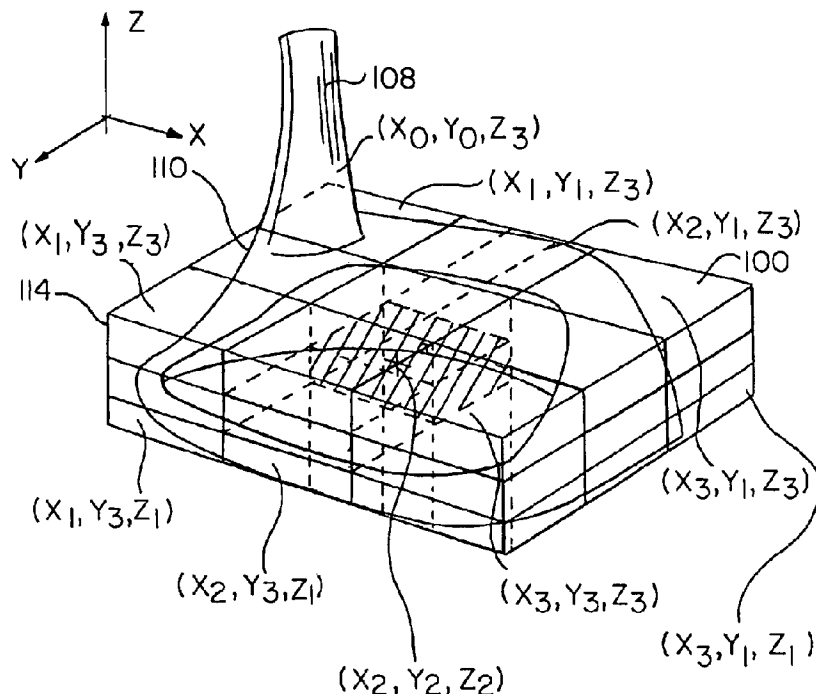
- (63) Continuation-in-part of application No. 10/383,532, filed on Mar. 10, 2003, now abandoned, which is a continuation-in-part of application No. 09/849,522, filed on May 7, 2001, now Pat. No. 6,530,848.
- (60) Provisional application No. 60/205,250, filed on May 19, 2000.

(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/012,788, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Matthew C. Graham(57) **ABSTRACT**

The performance of a golf club may be enhanced through the provision of a void space behind a face plate and above the sole plate, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space. The weighting coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration and hook or slice may be modified through the use of a definable weighting strategy.



US 7,128,660 C2

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EX PARTE
REEXAMINATION CERTIFICATE
ISSUED UNDER 35 U.S.C. 307

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

Matter enclosed in heavy brackets [] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN
DETERMINED THAT:

Claims 1-6, 8, 10-14 and 16-19 were previously cancelled.

Claims 9 and 15 are cancelled.

Claim 7 is determined to be patentable as amended.

New claims 20-22 are added and determined to be patentable.

7. The method as recited in claim [5] 20, including:

a selection [of Step(c)(ii)] by securing a strip-like weighting element over said void space at about a (Y2-Y3, Z2) position and spanning all X positions, thereby providing modification of penetration at a medium ball trajectory; and

weighting selection [of Step (c)(iv)] with regard to the X-axis to compensate for [hock] hook or slice.

20. A method of enhancing performance of a golf club head, the method comprising the steps of:

(a) providing a void space behind a face plate of the golf club head and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system including X1, X2 and X3 respective low-to-high locations upon an X-axis of said system, Y1, Y2, and Y3 respective low-to-high locations upon a Y-axis of said system, and Z1, Z2 and Z3 respective low-to-high locations of said system upon a Z-axis of said system within said head to define a 3x3x3 volumetric matrix of cells in which said sole portion is partially congruent with a bottom-most XY plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said head intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis

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value corresponds to a direction from a heel-to-toe of said head, an increase in Y-axis value corresponds in direction from a face-to-rear of said head, and an increase in Z-axis value corresponds to an increase in height above said sole portion; and

(c) selectably employing two of the following weighting strategies to said club head, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:

(i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin in which an increase in a Z-axis value does not correspond to a decrease in Y-axis value;

(ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;

(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or

(iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice,

in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

21. The method as recited in claim 20, further comprising: positioning weighting means within said matrix of said void space between a low X or X1 coordinate to compensate for hook, to an high X or X3 coordinate to compensate for slice, said strategy selectably inclusive of a neutral hook-slice effect by positioning at a X2 coordinate.

22. The method as recited in claim 20, further comprising: positioning weighting means within said matrix of said void space between a low Z or Z1 coordinate, corresponding to increased trajectory, to a high Z or Z3 coordinate corresponding to decreased trajectory, said strategy selectably inclusive of a neutral effect Z2 coordinate therebetween.

* * * * *



US007128660C2

EXH. B

(12) **EX PARTE REEXAMINATION CERTIFICATE** (10189th)
United States Patent
Gillig

(10) Number: **US 7,128,660 C2**

(45) Certificate Issued: **Jun. 12, 2014**

(54) **METHOD OF GOLF CLUB PERFORMANCE
ENHANCEMENT AND ARTICLES
RESULTANT THEREFROM**

(75) Inventor: **John P. Gillig, Pompano Beach, FL (US)**

(73) Assignee: **Triple Tee Golf, Inc., Pompano Beach,
FL (US)**

Reexamination Request:

No. 90/012,788, Feb. 6, 2013

Reexamination Certificate for:

Patent No.: **7,128,660**
Issued: **Oct. 31, 2006**
Appl. No.: **10/818,899**
Filed: **Apr. 3, 2004**

Reexamination Certificate C1 7,128,660 issued Oct. 24, 2013

Certificate of Correction issued Jul. 31, 2007

Related U.S. Application Data

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(51) **Int. Cl.**
A63B 53/00 (2006.01)
A63B 53/04 (2006.01)

(52) **U.S. Cl.**
USPC **473/324; 473/334; 473/340; 473/345;**
473/409

(58) **Field of Classification Search**
USPC **473/335, 345, 349**
See application file for complete search history.

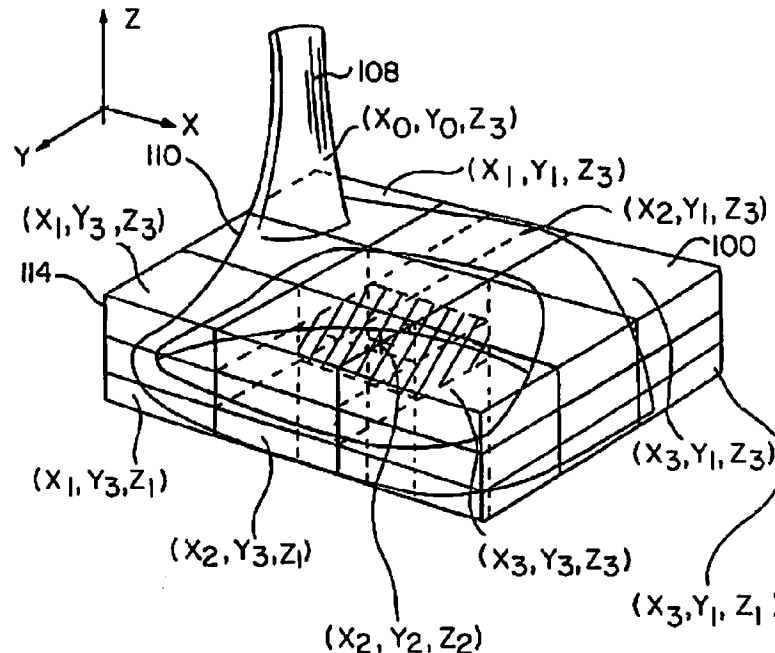
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/012,788, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Matthew C. Graham

(57) **ABSTRACT**

The performance of a golf club may be enhanced through the provision of a void space behind a face plate and above the sole plate, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space. The weighting coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration and hook or slice may be modified through the use of a definable weighting strategy.



US 7,128,660 C2

1

**EX PARTE
REEXAMINATION CERTIFICATE
ISSUED UNDER 35 U.S.C. 307**

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INDICATED BELOW.

Matter enclosed in heavy brackets [] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in *italics* indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN
DETERMINED THAT:

Claims 1-6, 8, 10-14 and 16-19 were previously cancelled.
Claims 9 and 15 are cancelled.

Claim 7 is determined to be patentable as amended.

New claims 20-22 are added and determined to be patentable.

7. The method as recited in claim [5] 20, including:
a selection [of Step(c)(ii)] by securing a strip-like weight-
ing element over said void space at about a (Y2-Y3, Z2)
position and spanning all X positions, thereby providing
modification of penetration at a medium ball trajectory;
and

weighting selection [of Step (c)(iv)] with regard to the
X-axis to compensate for [hook] hook or slice.

20. A method of enhancing performance of a golf club
head, the method comprising the steps of:

(a) providing a void space behind a face plate of the golf
club head and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate sys-
tem including X1, X2 and X3 respective low-to-high
locations upon an X-axis of said system, Y1, Y2, and Y3
respective low-to-high locations upon a Y-axis of said
system, and Z1, Z2 and Z3 respective low-to-high loca-
tions of said system upon a Z-axis of said system within
said head to define a 3x3x3 volumetric matrix of cells in
which said sole portion is partially congruent with a
bottom-most XY plane thereof, in which said face plate
intersects a forward-most XZ plane thereof, and in
which a heel and hosel side of said head intersects a YZ
plane thereof substantially at an origin of said coordi-
nate system, and further in which an increase in X-axis

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value corresponds to a direction from a heel-to-toe of
said head, an increase in Y-axis value corresponds in
direction from a face-to-rear of said head, and an
increase in Z-axis value corresponds to an increase in
height above said sole portion; and

(c) selectably employing two of the following weighting
strategies to said club head, in which at least one weight-
ing means thereof is not contiguous to any part of said
face plate and a selected value of Y in one of said strat-
egies does not equal a selected value of Y in a second
selected strategy, the strategies comprising:

(i) to modify backspin, providing within said void space
weighting means between a low Y, low Z coordinate to
increase backspin to a high Y, high Z coordinate to
decrease backspin in which an increase in a Z-axis value
does not correspond to a decrease in Y-axis value;

(ii) to modify ball penetration, providing within said void
space weighting means between a high Y, high Z coordi-
nate to maximize penetration to a low Y, low Z coordi-
nate to minimize penetration;

(iii) to modify ball trajectory, modifying weighting means
substantially within said void space between a low Z-coor-
dinate to increase trajectory to a high Z-coordinate to
decrease trajectory; or

(iv) to compensate for ball hook or slice, providing weight-
ing means substantially within said void space at a low
X-coordinate to compensate for hook to a high X-coor-
dinate to compensate for slice,

in which at least one selected strategy includes weighting
means not contiguous with any inner surface of said void
space.

21. The method as recited in claim 20, further comprising:
positioning weighting means within said matrix of said
void space between a low X or X1 coordinate to com-
pensate for hook, to an high X or X3 coordinate to
compensate for slice, said strategy selectably inclusive
of a neutral hook-slice effect by positioning at a X2
coordinate.

22. The method as recited in claim 20, further comprising:
positioning weighting means within said matrix of said
void space between a low Z or Z1 coordinate, corre-
sponding to increased trajectory, to a high Z or Z3
coordinate corresponding to decreased trajectory; said
strategy selectably inclusive of a neutral effect Z2 coor-
dinate therebetween.

* * * * *



(12) **INTER PARTES REEXAMINATION CERTIFICATE (712th)**

United States Patent

Gillig

(10) Number: **US 7,128,660 C1**

(45) Certificate Issued: **Oct. 24, 2013**

(54) **METHOD OF GOLF CLUB PERFORMANCE
ENHANCEMENT AND ARTICLES
RESULTANT THEREFROM**

(58) **Field of Classification Search**
USPC 473/324, 409, 334, 340, 345
See application file for complete search history.

(75) Inventor: **John P. Gillig, Pompano Beach, FL (US)**

(56) **References Cited**

(73) Assignee: **Triple Tee Golf, Inc., Pompano Beach,
FL (US)**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 95/002,049, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Reexamination Request:
No. 95/002,049, Jul. 20, 2012

Primary Examiner — Matthew C. Graham

Reexamination Certificate for:
Patent No.: **7,128,660**
Issued: **Oct. 31, 2006**
Appl. No.: **10/818,899**
Filed: **Apr. 3, 2004**

(57) **ABSTRACT**

Certificate of Correction issued Jul. 31, 2007

Related U.S. Application Data

The performance of a golf club may be enhanced through the provision of a void space behind a face plate and above the sole plate, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space. The weighting coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration and hook or slice may be modified through the use of a definable weighting strategy.

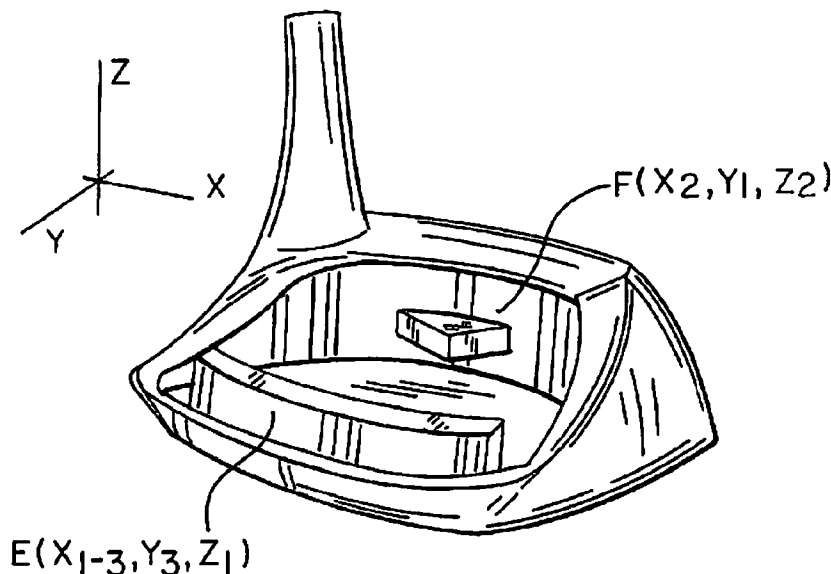
(63) Continuation-in-part of application No. 10/383,532, filed on Mar. 10, 2003, now abandoned, which is a continuation-in-part of application No. 09/849,522, filed on May 7, 2001, now Pat. No. 6,530,848.

(60) Provisional application No. 60/205,250, filed on May 19, 2000.

(51) Int. Cl.
A63B 53/00 (2006.01)
A63B 53/04 (2006.01)

At the time of issuance and publication of this certificate, the patent remains subject to pending reexamination control number 90/012,788 filed Feb. 6, 2013. The claim content of the patent may be subsequently revised if a reexamination certificate issues from the reexamination proceeding.

(52) U.S. Cl.
USPC 473/324; 473/409; 473/334; 473/340;
473/345



US 7,128,660 C1

1

2

**INTER PARTES
REEXAMINATION CERTIFICATE
ISSUED UNDER 35 U.S.C. 316**

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

Matter enclosed in heavy brackets [] appeared in the
patent, but has been deleted and is no longer a part of the
patent; matter printed in italics indicates additions made
to the patent.

ONLY THOSE PARAGRAPHS OF THE
SPECIFICATION AFFECTED BY AMENDMENT
ARE PRINTED HEREIN.

Column 3, line 11:

It is a further object to provide a club head, modified with
a hollow interior and having selectable point, axis, vector *and*
distributed linear or non-linear weights which may be
inserted or removed to suit particular preferences, needs and
physiologic requirements of a golfer.

AS A RESULT OF REEXAMINATION, IT HAS BEEN
DETERMINED THAT:

Claims 1-6, 8, 10-14 and 16-19 are cancelled.

Claims 7, 9 and 15 were not reexamined.

* * * * *

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TAYLOR MADE GOLF COMPANY, INC.,
8 d/b/a TaylorMade-adidas Golf

9
10 UNITED STATES DISTRICT COURT
11 SOUTHERN DISTRICT OF CALIFORNIA

12 TRIPLE TEE GOLF, INC., a Florida
13 corporation,

14 Plaintiff,

15 v.

16 TAYLOR-MADE/ADIDAS, a
17 Delaware corporation,

18 Defendant.

19
20 AND RELATED COUNTERCLAIM.
21

Case No. 3:11-CV-2974 JLS-WVG

**TAYLOR MADE'S NOTICE OF
MOTION AND MOTION FOR
SUMMARY JUDGMENT**

Submitted Herewith:

1. Memorandum of Points and Authorities
2. Declaration of Gary A. Clark
3. Declaration of Todd Beach
4. Separate Statement of Material Facts

Date: February 19, 2015

Time: 1:30 p.m.

Ctrm: Hon. Janis L. Sammartino
Courtroom 6

1 **TO: ALL PARTIES AND THEIR ATTORNEYS OF RECORD**

2
3 **PLEASE TAKE NOTICE** that on February 19, 2015, at 1:30 p.m., or as soon
4 thereafter as counsel may be heard, in the courtroom of the Honorable Janis L.
5 Sammartino, United States Courthouse, Courtroom 6, 221 West Broadway, San
6 Diego, California 92101, Defendant and Counter-claimaint, Taylor Made Golf
7 Company, Inc., d/b/a TaylorMade-adidas Golf ("Taylor Made"), will bring on for
8 hearing the following motion.

9
10 **MOTION**

11 Pursuant to Rule 56 of the Federal Rules of Civil Procedure, Defendant and
12 Counter-claimaint Taylor Made hereby moves for summary judgment that Plaintiff
13 and Counter-defendant Triple Tee Golf, Inc. ("Triple Tee") is precluded under
14 35 U.S.C. §§ 252 and 307(b) from pursuing its claim for infringement of U.S. Patent
15 No. 7,128,660 ("660 patent") against Taylor Made.
16

17 The grounds for this motion are as follows:
18

19 (1) As the result of an *ex parte* reexamination under 35 U.S.C. § 302 *et seq.*
20 in the U.S. Patent and Trademark Office, Control No. 90/012,788, the only claims
21 now extant in the reexamined '660 patent are new independent claim 20 and
22 dependent claims 7, 21 and 22.
23

24 (2) The scope of claim 20 is different compared to its counterpart, claim 9,
25 in the original '660 patent.
26

27 (3) Taylor Made's last manufacture in this country or importation into this
28

1 country of any golf clubs that Triple Tee's First Amended Complaint accuses of
2 infringing the '660 patent occurred before the issuance of the *ex parte* reexamination
3 certificate on June 12, 2014, and Taylor Made has no present intention of
4 manufacturing in this country or importing into this country any more of the accused
5 golf clubs.

6
7 (4) The first paragraph of Section 252, as applied to a reexamined patent
8 under Section 307(b), provides that it shall have effect only for causes arising after
9 the issuance of the reexamination certificate, except that any claim of the reexamined
10 patent that is "substantially identical" to a claim of the original patent shall "have
11 effect continuously from the date of the original patent."

12
13 (5) Because claim 20 is not substantially identical to claim 9, claim 20 only
14 has effect from the issuance of the *ex parte* reexamination certificate on June 12,
15 2014.

16
17 (6) The first sentence of the second paragraph of Section 252 defines an
18 "absolute intervening right" that, as applied to a reexamined patent under
19 Section 307(b), further provides that any person who, prior to the issuance of the
20 reexamination certificate, made, purchased, offered to sell, or used within the United
21 States, or imported into the United States, anything patented by the reexamined
22 patent, has the right "to continue the use of, to offer to sell, or to sell to others to be
23 used, offered for sale, or sold, the specific thing so made, purchased, offered for sale,
24 used, or imported" unless so doing would infringe a valid claim of the reexamined
25 patent that was in the original patent.

26
27 (7) Again, because claim 20 is not substantially identical to claim 9, Taylor
28 Made and its distributors, resellers and customers, have an absolute intervening right

1 to continue to use, offer to sell, and sell any accused golf clubs that Taylor Made first
2 manufactured in this country or imported into this country before the issuance of the
3 *ex parte* reexamination certificate on June 12, 2014, even if those golf clubs
4 otherwise infringed claim 20 (which they do not).

5
6 In support of this motion, Taylor Made relies on the Memorandum of Points
7 and Authorities and the declarations of Gary A. Clark and Todd Beach submitted
8 herewith, as well as on the pleadings and other papers on file in this action. Pursuant
9 to CivLR 7.1.f.1., a separate statement of material facts is also submitted herewith.

10
11 Dated: November 12, 2014

12 SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

13
14 By /s/ Gary A. Clark
15 GARY A. CLARK

16 Attorneys for Defendant and Counter-Claimant
17 TAYLOR MADE GOLF COMPANY, INC.,
18 d/b/a TaylorMade-adidas Golf
19
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1 if the accused infringer made substantial preparations for the infringing activities
2 prior to reissue. *Id.*

3 Only absolute intervening rights are at issue on this motion because, as
4 noted above, Taylor Made has no present intention to continue or resume
5 manufacturing in the U.S. or importing into the U.S. any of the Accused Products
6 identified in the First Amended Complaint. Thus, Taylor Made is not asserting
7 equitable intervening rights at this time.⁴

8 **B. Triple Tee Is Not Entitled To Infringement Damages Before The Issuance**
9 **Of The Reexamined Claims Of The '660 patent**

10 Under Sections 252 and 307(b), Triple Tee is *not* entitled to recover
11 infringement damages for alleged infringement occurring before the issuance of the
12 *Ex Parte* Reexamination Certificate for the '660 patent on June 12, 2014. This is
13 because the added language in weighting strategy (c)(i) of new claim 20—“ an
14 increase in a Z-axis value does not correspond to a decrease in Y-axis value”—
15 represents a change in scope from its counterpart, original claim 9. This added
16 language in claim 20 requires both that (i) the location of the weighting means along
17 the Y-axis and the Z-axis is adjustable, and (ii) the adjustment is restricted to a path
18 that defines a non-decreasing function between a low Y, low Z coordinate to a
19 high Y, high Z coordinate. Claim 9 was not limited in either respect.

20 Each of these changes embodied in claim 20 is discussed in separate
21 sections below.

- 22 1. Claim 20 is not “substantially identical” because, unlike claim 9, it
23 requires the location of the weighting means to be adjustable

24 As discussed in section III.A.2.a, *supra*, the question whether the added
25 language in new claim 20 represents a difference in scope compared to original
26

27 ⁴ Taylor Made reserves the right to assert equitable intervening rights if it decides to
28 resume manufacture or importation of the Accused Products in the future.

1 claim 9 is a matter of law for the Court because it turns on claim construction.

2 *Laitram* at 1346-47. The principles of claim construction are well-established and
3 straightforward.

4 Claim terms are normally given their “ordinary and customary
5 meaning,” which is “the meaning that the term would have to a person of ordinary
6 skill in the art in question at the time of the invention.” *Phillips v. AWH Corp.*,
7 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (*en banc*). “The person of ordinary skill in
8 the art is deemed to read the claim term not only in the context of the particular claim
9 in which the disputed term appears, but in the context of the entire patent, including
10 the specification.” *Id.* at 1313. To ascertain the “ordinary and customary meaning”
11 of a claim term, “the court looks to ‘those sources available to the public that show
12 what a person of skill in the art would have understood disputed claim language to
13 mean.’” *Id.* at 1314. The sources include “the words of the claims themselves, the
14 remainder of the specification, the prosecution history, and extrinsic evidence
15 concerning relevant scientific principles, the meaning of technical terms, and the state
16 of the art.” *Id.*

17 Applying these principles to new claim 20 and original claim 9 leads to
18 the conclusion that claim 20, unlike claim 9, requires the location of the weighting
19 means to be adjustable. Claim construction begins by “look[ing] to the words of the
20 claims themselves ... to define the scope of the patented invention.” *Phillips*, 415
21 F.3d at 1312 (internal citations omitted). Here, the added claim language itself
22 explicitly recites “an ***increase*** in the Z-axis value” of the weighting means. Beach
23 Decl. ¶ 21. The added claim language also explicitly recites that this adjustment of
24 the Z-axis location of the weighting means may “***correspond***” to a change in the Y-
25 axis location of the weighting means. *Id.*

26 This is the only logical interpretation of the language. Beach Decl. ¶ 22.
27 It would not be possible to have “an increase” in the Z-axis value unless the
28 weighting means was already present in the golf club head at another location having

1 a lower Z-axis value. *Id.* “[A]n increase” in the Z-axis value requires adjusting its
2 position from that existing location to another location having a higher Z-axis value.
3 *Id.* The same is true for the location of the weighting means along the Y-axis. *Id.*
4 Although the added language prohibits a decrease in the Y-axis value of the
5 weighting means when its Z-axis value increases, the claim at least implicitly
6 contemplates an increase in its Y-axis value. *Id.*

7 Unlike claim 20, original claim 9 lacked any language indicating that the
8 weighting means must be adjustable within the claimed ranges. Beach Decl. ¶ 20.
9 Claim 9 only recited “*providing* within said void space weighting means between a
10 low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate.” *Id.*
11 Thus, the weighting strategy was satisfied by simply placing a weighting means at the
12 desired location during design and manufacture, without any implication that its
13 location might be adjusted. *Id.* This interpretation is consistent with the fact that all
14 but one of the '660 patent's embodiments (Fig. 16) discloses club heads with fixed
15 weights such that the weights cannot be moved or adjusted within the club head. *See,*
16 *e.g.*, Clark Decl. ¶ 4 & Exh. A ('660 patent, Figs. 14, 15, 17-20).

17 The interpretation of claim 9 as not embodying adjustability was
18 confirmed by the Examiner during the *ex parte* reexamination of claim 9. As
19 discussed in section II.B.2, *supra*, in response to Triple Tee's argument that claim 9
20 contemplated adjustability of the weighting means, the Examiner stated that “the
21 claim does not recite adjustability of the weights for different weighting strategies.”
22 Clark Decl. ¶ 13 & Exh. D at p. 56. In response, Triple Tee cancelled claim 9
23 without further contesting the issue. *Id.*

24 This interpretation was further confirmed by the Board's decision in the
25 *inter partes* reexamination of Triple Tee's other patent-in-suit, U.S. Patent
26 No. 7,854,667 (“the '667 patent”), now dismissed.⁵ The '667 patent was a

27 _____
28 ⁵ Control No. 95/002,052.

1 continuation-in-part of the '660 patent, and claim 1 of the '667 patent recited a similar
2 limitation to weighting strategy (c)(i) of claim 9 of the '660 patent:

3 (i) a weighting element secured substantially within said
4 void space between a lower Y, lower Z coordinate, to
5 increase backspin, to a higher Y, higher Z coordinate to
decrease backspin;

6 Clark Decl. ¶ 22 & Exh. J ('667 patent, col. 10, lines 6-9). The difference between
7 the claim elements was the use of the word “secured” in claim 1 of the '667 patent in
8 place of the word “providing” in claim 9 of the '660 patent. In response to Triple
9 Tee’s argument that the weighting elements in claim 1 were adjustable, the Board
10 held that the claims of the '667 patent “do not require adjustability” or embody “any
11 requirement of a capability of adjusting or moving a weight element along or within
12 the claimed range.” *Id.*, ¶ 23 & Exh. K at p. 127.

13 Accordingly, because the location of the weighting means along the Z-
14 and Y-axes is adjustable in new claim 20, it is *not* substantially identical to original
15 claim 9 of the '660 patent.

16 2. Claim 20 is further not “substantially identical” because, unlike claim 9,
17 it restricts the adjustment of the weighting means to a specific path

18 Weighting strategy (c)(i) of claim 20 clearly contemplates a path for
19 adjusting the weighting means in which the Z-axis value increases in order to
20 decrease backspin. In order to effect this strategy, the added language in weighting
21 strategy (c)(i) of claim 20—“in which an increase in a Z-axis value cannot
22 correspond to a decrease in Y-axis value”—defines a non-decreasing function
23 between the Z- and Y-axis values of the weighting means. Beach Decl. ¶ 24.

24 Specifically, as the Z-axis value of the weighting means increases, it
25 precludes a decrease in the Y-axis value of the weighting means, implicitly allowing
26 the Y-axis value to increase or remain constant. *Id.* In other words, under weighting
27 strategy (c)(i), to decrease backspin the weighting means can be adjusted along a path
28 between a low Y, low Z coordinate to a high Y, high Z coordinate so long as the Z-

DECLARATION OF GARY A. CLARK

I, Gary A. Clark, declare as follows:

1. I am an attorney duly admitted to practice before this Court. I am a partner with Sheppard, Mullin, Richter & Hampton LLP, attorneys of record for Defendant and Counterclaimant Taylor Made Golf Company, Inc., d/b/a TaylorMade-adidas Golf ("Taylor Made").

2. If called as a witness, I could and would competently testify to all facts within my personal knowledge except where stated upon information and belief.

3. This declaration is submitted in support of TAYLOR MADE'S MOTION FOR SUMMARY JUDGMENT.

4. Attached hereto as Exhibit A is a true and correct copy of U.S. Patent No. 7,128,660 ("660 patent").

5. On July 20, 2012, Taylor Made filed a request for *inter partes* reexamination of the '660 patent in the PTO, Control No. 95/002,049. The request sought reexamination of all claims of the '660 patent except claims 7 and 15. On September 25, 2012, the Examiner granted in part the reexamination request, finding that Taylor Made had a reasonable likelihood of prevailing against all of the claims sought to be reexamined, except claim 9, based on each of the four references Taylor Made cited.

6. On the same day, September 25, 2012, the Examiner issued a first (non-final) office action, rejecting all claims under reexamination (*i.e.*, all claims

1 RESPONSE TO OFFICIAL ACTION UNDER 37 C.F.R. 1.530 IN EX-PARTE RE-
2 EXAMINATION, dated May 2, 2014.

3
4 17. Attached hereto as Exhibit H is a true and correct copy of the
5 NOTICE OF INTENT TO ISSUE *EX PARTE* REEXAMINATION CERTIFICATE, mailed
6 May 22, 2014.

7
8 18. Attached hereto as Exhibit I is a true and correct copy of the *EX*
9 *PORTE* REEXAMINATION CERTIFICATE for the '660 patent, which issued on June 12,
10 2014.

11
12 19. As a result of the two reexaminations, the '660 patent now has
13 one independent claim, new claim 20, and three dependent claims, claims 7, 21 and
14 22. Claim 20 is most similar to original dependent claim 9. Of the two independent
15 claims in the '660 patent, claims 1 and 11, only claim 1 (from which claim 9
16 depended) recited selectably employing two of four claimed weighting strategies to
17 the club head as does claim 20. Also, of the several claims that depended from
18 claim 1, only claim 9 required that "at least one selected strategy includes weighting
19 means not contiguous with any inner surface of said void space," as does claim 20.

20
21 20. Below is a chart comparing claim 20 with claim 9. Since claim 9
22 depended from claim 1, the left hand column reproduces claim 1 followed by
23 claim 9. Strike-throughs in the left hand column indicate language from claim 9 that
24 is not in claim 20, and underlining in the right hand column indicates language
25 added to claim 20 that was not in claim 9.

Original Claim 9	New Claim 20
1. A method of enhancing performance of a golf club, the method comprising the steps of:	20. A method of enhancing performance of a golf club, the method comprising the steps of:
(a) providing a void space behind a face plate of said club and above a sole portion thereof;	(a) providing a void space behind a face plate of said club and above a sole portion thereof;
(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club , an increase in Y-axis value corresponds in direction to a rear of said club , and an increase in Z-axis value corresponds to increase in height above said sole portion;	(b) applying a virtual X, Y, Z orthonormal coordinate system <u>including X1, X2 and X3 respective low-to-high locations upon an X-axis of said system, Y1, Y2 and Y3 respective low-to-high locations upon an Y-axis of said system, Z1, Z2 and Z3 respective low-to-high locations upon an Z-axis of said system within said head to define a 3x3x3 volumetric matrix of cells in</u> which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction <u>from</u> a <u>heel-to-toe</u> of said

Original Claim 9	New Claim 20
	<u>head</u> , an increase in Y-axis value corresponds in direction <u>from a face-to-rear</u> of said <u>head</u> , and an increase in Z-axis value corresponds to <u>an</u> increase in height above said sole portion; <u>and</u>
(c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:	(c) selectably employing two of the following club weighting strategies to said club <u>head</u> , in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:
(i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin;	(i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin <u>in which an increase in a Z-axis value does not correspond to a decrease in Y-axis value</u> ;
(ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize	(ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize

Original Claim 9	New Claim 20
penetration to a low Y, low Z coordinate to minimize penetration;	penetration to a low Y, low Z coordinate to minimize penetration;
(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or	(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or
(iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice, thereby enhancing performance of said club.	(iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice,
9. The method of enhancing performance of a golf club as recited in claim 1, in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.	in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

21. It can be seen in the above chart that besides rewriting claim 9 so that it is in independent form as claim 20, the primary changes in going from claim 9 to claim 20 were: (i) the inclusion in element (b) of a more specific description of the XYZ coordinate system as divided into “a 3x3x3 volumetric

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8 d/b/a TaylorMade-adidas Golf

9 UNITED STATES DISTRICT COURT
10 SOUTHERN DISTRICT OF CALIFORNIA
11

12 TRIPLE TEE GOLF, INC., a Florida
13 corporation,

14 Plaintiff,

15 v.

16 TAYLOR-MADE/ADIDAS, a
17 Delaware corporation,

18 Defendant.

19 AND RELATED COUNTERCLAIM.
20
21
22
23
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26
27
28

Case No. 3:11-CV-2974 JLS-WVG

**DECLARATION OF TODD BEACH
IN SUPPORT OF TAYLOR
MADE'S MOTION FOR
SUMMARY JUDGMENT**

Date: February 19, 2015

Time: 1:30 p.m.

Ctrm: Hon. Janis L. Sammartino
Courtroom 6

DECLARATION OF TODD BEACH

I, Todd Beach, declare as follows:

1. I am the Vice President of Metalwood Product Development in the Research and Development at Taylor Made Golf Company, Inc. ("Taylor Made"). Except where noted, I have personal knowledge of the facts set forth herein, which I know to be true and correct, and if called as a witness, I could and would competently testify thereto.

2. This declaration is submitted in support of TAYLOR MADE'S MOTION FOR SUMMARY JUDGMENT.

3. In preparation for this declaration, I have reviewed the following documents: (1) U.S. Patent No. 7,128,660 ("660 patent"); (2) *Inter Partes* Reexamination Certificate for the '660 patent; and (3) *Ex Parte* Reexamination Certificate for the '660 patent. Also, during the course of the *inter partes* and *ex parte* reexamination proceedings involving the '660 patent, I reviewed various papers and documents and submitted declarations in support of Taylor Made's requests and third party comments.

4. For purposes of this declaration, I have been asked to compare the claims of the reexamined '660 patent with the claims of the original '660 patent and provide my opinion on whether the scope of the claims in the reexamined patent are the same as or different from the scope of the claims of the original patent.

Background

5. In 1983, I graduated from the University of California, San Diego with a Bachelor of Science degree in Engineering (Engineering Sciences). In 1990, I

1 graduated from the University of California, San Diego with a Master of Science
2 degree in Engineering Sciences (Applied Mechanics).

3
4 6. Prior to joining Taylor Made, I worked as an engineer at Sparta, Inc. in
5 San Diego, California from 1984 to 1995.

6
7 7. In 1995, I joined Taylor Made as an engineer in the R&D department,
8 where I was responsible for metalwood shaft development and investigation of new
9 materials/technologies, until 1999. From 1999 to 2000, I served as the Manager of
10 Advanced Technology, where I was responsible for developing new technologies
11 for next generation golf clubs. From 2000 to 2002, I served as Manager of Rest-of-
12 the-World (ROW) Golf Club Development, where I was responsible for developing
13 metalwoods and irons designed specifically for non-US markets such as Japan,
14 Korea and Europe. From 2002 to 2012, I served as the Director of Metalwoods
15 Development where I was responsible for global metalwood club development.
16 From April 2012 to present, I have served as Vice President of Metalwood Product
17 Development in the Research and Development Department, where I am responsible
18 for global metalwood club development and advanced designs/technologies.

19
20 8. In my various positions at Taylor Made, I have been working with
21 other employees in the international Taylor Made family to define consumer needs
22 and develop a product strategy to meet those needs. I have worked with marketing
23 departments to launch new products, evaluate the strengths and weaknesses of the
24 marketed products, the ongoing adaptation of products, and marketing strategy to
25 meet changing consumer needs and desires. I must anticipate future market trends,
26 and plan, coordinate and implement research and development activities to best
27 position Taylor Made as a leader in the industry. Throughout my career, I have
28 acquired invaluable knowledge of managing complex international product

1 developments, managing organizations and influencing cross-functional teams to
2 lead in the highly competitive and volatile golf market.

3
4 9. Over the last 14 years, I have been involved in the study of metalwood
5 club performance, including how changes and movements of the center of gravity
6 (“CG”) of golf club heads affect various ball flight parameters, including spin,
7 trajectory, penetration, the ability to compensate for hook or slice, and ballooning.
8 CG is sometimes called the center of mass and is defined as the point in any object
9 where the mass of the object is equally balanced.

10
11 10. As part of this study of how CG affects golf club head performance, I
12 supervised a team of engineers at Taylor Made who have performed extensive
13 analyses and conducted numerous tests which have helped quantify the importance of
14 different club parameters on ball trajectory. Typical test methodologies have
15 included both player tests and robot tests where the ball launch initial parameters
16 (i.e., ball speed, vertical launch angle, horizontal launch angle, backspin & sidespin)
17 are measured for a wide variety of clubs that have different design specifications (i.e.,
18 CG, loft, etc.). In addition to initial parameters (“IP”), the actual trajectories can be
19 tracked using radar, and the actual landing positions (both carry and total distance)
20 can be measured (or calculated based on these parameters). We have conducted a
21 number of tests where the club head center of gravity has been changed by moving a
22 weight to different positions, and not changing any other parameters of the club, both
23 with the robot and with players. These tests have been very valuable to isolate the
24 influence of CG position on club performance. Finite Element analyses of ball
25 impact with a club has also been used numerous times to validate these test results.
26 Based on these tests and analyses, we have found that moving the CG of the club can
27 change the way the club twists during the swing and also can change the amount of
28 gear effect that can result during impact with the ball. Both of these work together to

1 change the IP of the ball when the CG is changed for a given club. For example,
2 when the CG is moved back away from the club face, there is more dynamic loft
3 (twisting of the club during the swing), and there is a higher CG projection onto the
4 face, which both combine to impart more backspin to the ball. Also, by moving the
5 CG higher (from the sole towards the crown), the CG projects higher on the face,
6 which results in more backspin due to vertical gear effect. Moving the CG both back
7 and higher results in more backspin due to the higher CG projection and greater
8 dynamic loft.

9
10 11. I am also a named inventor on over 100 United States patents in the golf
11 area, nearly all of which relate to the design of golf club heads.

12
13 **The '660 patent**

14 12. The '660 patent relates to “a method of selectably varying the center of
15 gravity and distribution of weighting in a void space in the head of a golf club.”
16 ('660 patent, col. 1, lines 19-21.)

17
18 13. The '660 patent issued with nineteen claims, including two independent
19 claims.

20
21 14. Independent claim 1 was directed to a “method of enhancing the
22 performance of a golf club” comprising the steps of: (a) providing a void space
23 behind a face plate and above a sole portion of the club head; (b) applying a virtual
24 X, Y, Z orthonormal coordinate system to the club head; and (c) selectably
25 employing two of four weighting strategies to the club, in which at least one
26 weighting means is not contiguous to any part of the face plate and a selected value
27 of Y in any one of the weighting strategies does not equal a selected value of Y in a
28 second selected weighting strategy.

15. Independent claim 11 also recited a method of enhancing performance of a golf club. It included steps (a) and (b) of claim 1, and then set forth two steps, (c) and (d), for providing weighting means within the void space of the club head relative to the X, Y and Z coordinates.

16. Figures 2 and 14, reproduced below, show how the '660 patent applies an X, Y, Z orthonormal coordinate system to a golf club head to identify the various locations for providing weighting elements to modify the center of gravity or CG of

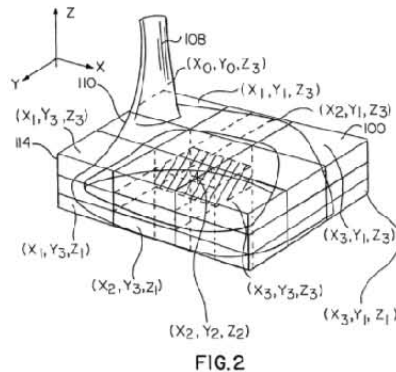


FIG. 2

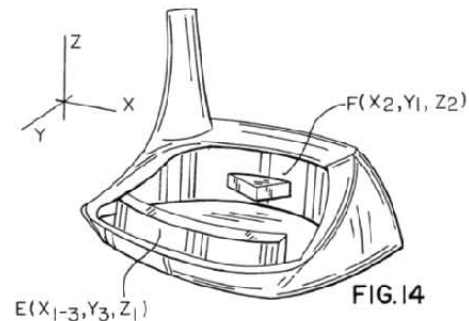


FIG. 14

the club head. Superimposing a three-dimensional X, Y, Z coordinate system on a golf club head for purposes such as this is common in the golf industry, though the exact manner of doing so varies. As in these two figures, however, usually the X-axis extends between the heel and toe of the club head, the Y-axis extends between the front and rear of the club head, and the Z-axis extends between the sole and the top of the club head.

Reexamination Of The '660 patent And Change In Claim Scope

17. The two Reexamination Certificates for the '660 patent show that the patent now has just four claims: new independent claim 20 and dependent claims 7, 21 and 22.

1 18. I understand that new claim 20 is most similar to original claim 9 of the
2 '660 patent, and that the primary changes in going from claim 9 to claim 20 were:
3 (i) the inclusion in element (b) of a more specific description of the XYZ coordinate
4 system as divided into “a 3x3x3 volumetric matrix of cells,” with each axis having
5 three low-to-high locations (*e.g.*, “X1, X2 and X3”), and (ii) the added language in
6 element (c)(i) for positioning a weighting means to modify backspin requiring that
7 “an increase in a Z-axis value does not correspond to a decrease in Y-axis value.”
8

9 19. I have been asked to provide my opinion whether the added language in
10 element (c)(i) affected the scope of claim 20 as compared to claim 9. I understand
11 that Triple Tee Golf maintains that the added language in element (c)(i) of claim 20
12 does not change its scope relative to claim 9. I disagree for two reasons.
13

14 20. First, element (c)(i) of claim 9 did not recite adjustability of the
15 weighting means; it only recited “providing within said void space weighting means
16 between a low Y, low Z coordinate to increase backspin to a high Y, high Z
17 coordinate.” As I interpret this language, the weight could have been provided and
18 fixed in place during design and manufacture, without any ability to adjust its
19 location.
20

21 21. My interpretation of the added language in element (c)(i) of claim 20 is
22 that it requires the location of the weighting means to be adjustable. The words
23 themselves require “an *increase* in the Z-axis value” of the weighting means and that
24 this adjustment in the Z-axis location of the weighting means may “*correspond*” to a
25 change in the Y-axis location of the weighting means.
26

27 22. Moreover, this is the only logical interpretation of the added language in
28 element (c)(i). I do not see how there could be “an increase” in the Z-axis value

1 unless the weighting means was already present in the golf club head at another
2 location having a lower Z-axis value. "An increase" in the Z-axis value would
3 require adjusting its position from that existing location to another location having a
4 higher Z-axis value. I also think this would also be the case for the location of the
5 weighting means along the Y-axis. The added language prohibits a decrease in the
6 Y-axis value of the weighting means when its Z-axis value increases, but to me this
7 implies that Y-axis value could increase.

8
9 23. For this reason alone, I believe that claim 20 has a different scope
10 compared to claim 9.

11
12 24. Second, weighting strategy (c)(i) of claim 20 describes a strategy in
13 which the Y-Z coordinates of the weighting means increase in order to decrease
14 backspin. In order to effect this weighting strategy, the added language in
15 element (c)(i) of claim 20 restricts the adjustment of the weighting means to a path
16 that defines a non-decreasing function between a low Y, low Z coordinate to a
17 high Y, high Z coordinate. As the Z-axis value of the weighting means increases, it
18 precludes a decrease in the Y-axis value of the weighting means. As I interpret this
19 claim language, in order to decrease backspin the weighting means is adjustable
20 along a path between a low Y, low Z coordinate to a high Y, high Z coordinate, in
21 which the Z-axis value only increases and the Y-axis value either increases or
22 remains constant.

23
24 25. Element (c)(i) of claim 9 contained no such restriction; it allowed the
25 weighting means to be positioned anywhere between a low Y, low Z coordinate to a
26 high Y, high Z coordinate, which I interpret to mean just about any place within the
27 golf club head.

1 26. For the added language in element (c)(i) of claim 20 not to change the
2 scope of claim 9, it would have to be the case that the only way to achieve ever
3 decreasing backspin between a low Y, low Z coordinate to a high Y, high Z
4 coordinate would be to follow a path defined by a non-decreasing function. In other
5 words, Triple Tee Golf's premise would have to be that an increase in the Z-axis
6 value accompanied by a decrease in the Y-axis value will **never** cause backspin to
7 decrease, that backspin will **only** decrease between a low Y, low Z coordinate to a
8 high Y, high Z coordinate **if** "an increase in a Z-axis value does not correspond to a
9 decrease in Y-axis value." As I will demonstrate below, this premise is not correct.

10
11 27. To begin, it is well understood that repositioning a weighting element in
12 a golf club head will result in a change in the location of the CG of the golf club
13 head. One of the effects of changing the location of the CG will be the amount of
14 backspin in a golf ball that club head creates when it strikes the golf ball.

15
16 28. The club head of a typical driver weighs about 200 grams, of which
17 typically no more than up to about 20 to 30 grams is available to be used as a
18 discretionary weighting element that can be positioned in or on the club head to move
19 its CG. The rest of the weight (typically a minimum of about 170 to 180 grams) is
20 needed for the basic construction of the club head (club head shell, strike plate, sole
21 plate, hosel).

22
23 29. If the weighting element is moved along the Y-coordinate, the CG will
24 move in the same direction along the Y-coordinate, though not as far as the weighting
25 element is moved since the weight of the weighting element is only a fraction of the
26 total weight of the club head. Similarly, if the weighting element is moved along the
27 Z-coordinate, the CG will move in the same direction along the Z-coordinate (though,
28 again, not as far as the weighting element). If the weighting element is moved along

1 both coordinates, that is, diagonally, the CG will move in that diagonal direction.
2 Because the weighting element weighs only a small fraction of the overall weight of
3 the club head, the CG can only be moved up to a maximum of about 10 millimeters
4 in any direction from the original position of the CG (*i.e.*, without a discretionary
5 weighting element).

6
7 30. Original claim 9 and new claim 20 define four possible weighting
8 strategies—(c)(i) through (c)(iv)—for repositioning the location of the club head’s
9 CG to affect ball flight.

10
11 31. I should note that the statement in weighting strategy (c)(i) about how
12 backspin changes with changes in the positions of the weighting means is incorrect.
13 Weighting strategy (c)(i) states that providing a weighting means at a low Y, low Z
14 coordinate increases backspin, while providing a weighting means at a high Y, high Z
15 coordinate decreases backspin. The actual effect on backspin in a golf club is ***exactly***
16 ***the opposite***: providing a weighting means at a low Y, low Z coordinate ***decreases***
17 backspin, while providing a weighting means at a high Y, high Z coordinate
18 ***increases*** backspin.

19
20 32. For many years, some people in the golf industry may have
21 believed that backspin increased or decreased with movement of the club head’s CG
22 as stated in element (c)(i) of claims 9 and 20, so this mistake is understandable.
23 However, some of us who have studied this issue more closely with relatively
24 sophisticated analysis and testing have concluded that the effects on backspin are
25 exactly the opposite of what is stated in element (c)(i). *See, e.g.*, “Placement of
26 Center of Gravity for Best Spin and Launch Angle,” by Dave Tutelman, dated
27 August 16, 2013, available at <http://www.tutelman.com/golf/clubs/center>
28 OfGravity1.php, a copy of which is attached to this declaration as Exhibit A. At

1 Taylor Made, we have studied this issue extensively, including measuring backspin
2 rate on actual golf balls hit robotically with actual golf clubs, and have shown that
3 moving the CG lower and more forward in the golf club head decreases backspin,
4 while moving the CG higher and more rearward increases backspin.

5
6 33. While I thus disagree that strategies (c)(i) and (c)(ii) correctly describe
7 how moving the CG affects backspin and penetration, this does not affect my analysis
8 whether the added language in element (c)(i) changes the scope of claim 20
9 compared to claim 9. I reach the same conclusion whether or not weighting
10 strategies (c)(i) and (c)(ii) correctly state the effects on backspin and penetration.

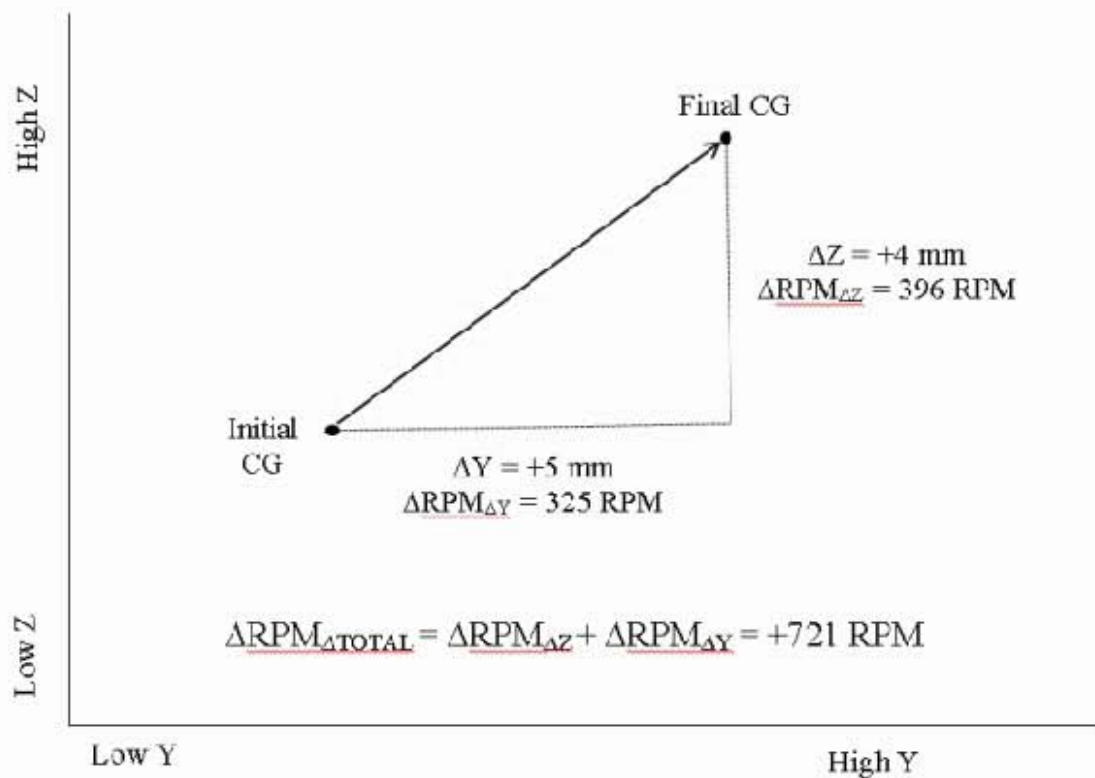
11
12 34. Based on my review of the '660 patent, including claims 9 and 20, I
13 believe that the issues relevant to this question are not in dispute: (a) backspin is
14 affected by both the Y-coordinate and the Z-coordinate of the weighting means;
15 (b) backspin can be changed by moving the Y-coordinate of the weighting means or
16 by moving the Z-coordinate of the weighting means, or by moving both; and (c) the
17 changes in backspin by moving both the Y-coordinate and the Z-coordinate at the
18 same time are essentially additive or offsetting, depending on the direction of
19 movement along the two coordinates. By increasing the Y-coordinate and the Z-
20 coordinate of a weighting means, their individual effects on backspin will be additive.
21 On the other hand, if the Z-coordinate of a weighting means increases and the Y-
22 coordinate of the weighting means decreases, their individual effects on backspin will
23 be offsetting.

24
25 35. Any golf club can be characterized by the amount of change in backspin
26 for each millimeter (mm) of movement of the CG along the Y-coordinate or the Z-
27 coordinate. For a typical Taylor Made driver that has been accused of infringement
28 in this lawsuit, backspin may change by about 65 rpm for each mm of movement of

the CG along the Y-coordinate and by about 99 rpm for each mm of movement of the CG along the Z-coordinate.

36. Thus, for a typical accused Taylor Made driver, a positive movement of the weighting means along the Z-coordinate that moves the CG by 5 mm results in a backspin change of about +396 rpm, while a positive movement of the weighting means along the Y-coordinate that moves the CG by 4 mm results in a backspin change of about +325 rpm. As shown in Example 1 below, positive CG movements of 4 mm along the Z-coordinate and 5 mm along the Y-coordinate at the same time result in a *net* change of about +721 rpm (+396 rpm + 325 rpm). This would be an

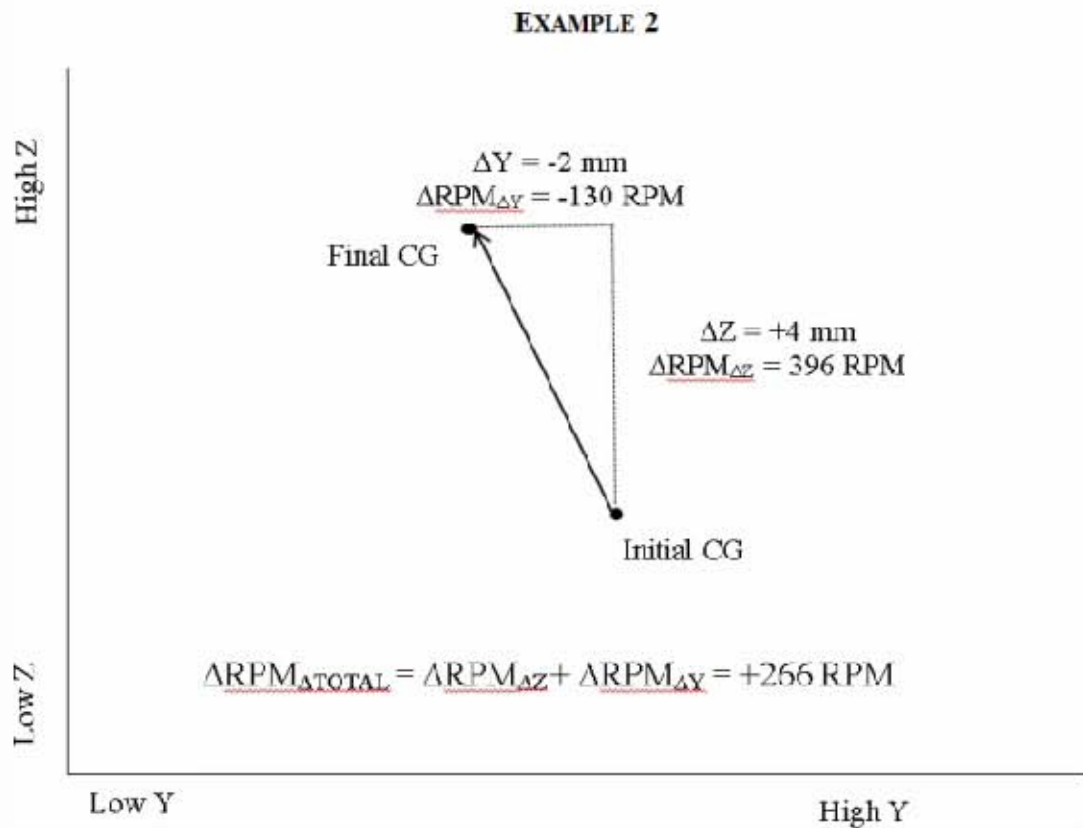
EXAMPLE 1



increase in backspin. If it were assumed, as claimed in weighting strategy (c)(i), that positive movement of the weighting means along both the Y and Z coordinates would instead produce a decrease in backspin, then backspin would change by the same

amount except that it would be a *net decrease* of about -721 rpm (-325 rpm - 396 rpm). Either way, the magnitude of the net change is the same (721 rpm) because the CG moved in a positive direction along both coordinates and so the backspin changes were additive.

37. As shown in Example 2 below, the same positive CG movement of 4 mm along the Z-coordinate ($\Delta\text{RPM}_{\Delta Z} = +396$ rpm) as in Example 1, accompanied by a negative CG movement of -2 mm along the Y-coordinate ($\Delta\text{RPM}_{\Delta Y} = -130$ rpm), will result in a positive backspin change of about +266 rpm (+396 rpm - 130 rpm).

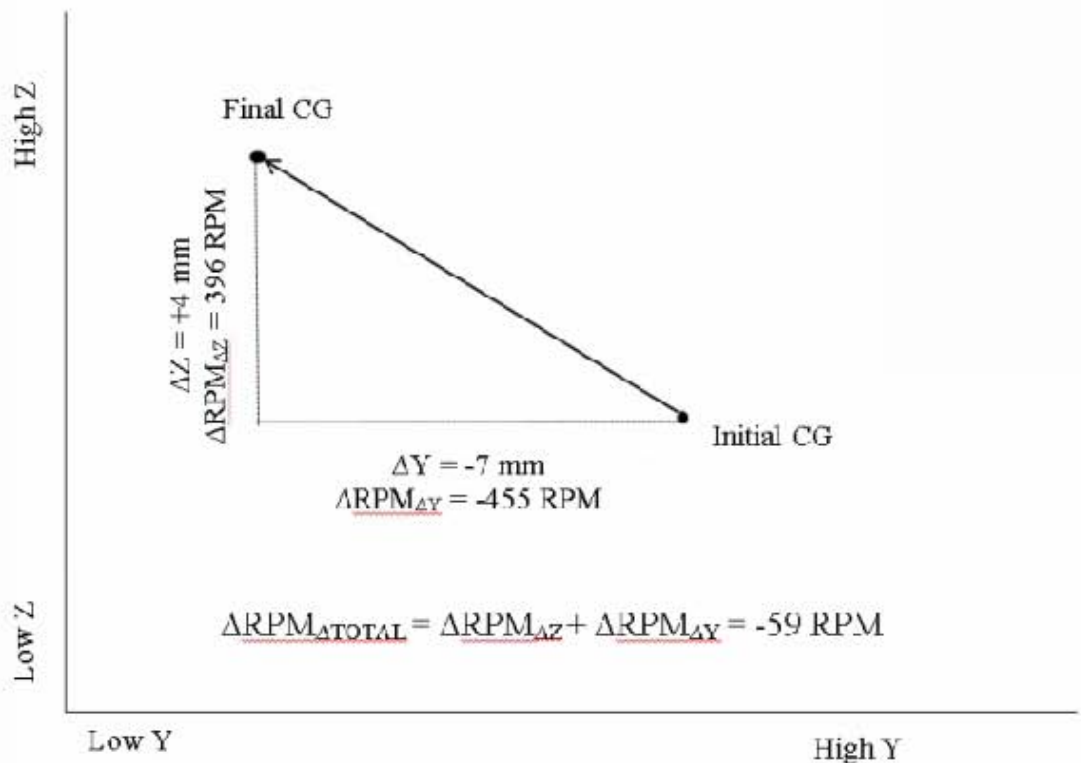


Note that there is still a *net increase* in backspin as in Example 1 because the decrease in backspin caused by the negative movement along the Y-coordinate is offset by the larger, positive contribution to backspin from movement along the Z-coordinate. Again, if it were assumed, as claimed in weighting strategy (c)(i), that

1 positive movement of the weighting means along the Z-coordinate would instead
 2 produce a decrease in backspin while negative movement along the Y-coordinate
 3 would instead produce an increase in backspin, then backspin would change by the
 4 same amount except that it would be a **net decrease** in backspin of about -266 rpm (-
 5 396 rpm + 130 rpm).

6
 7 38. As shown in Example 3 below, the same positive movement of 4 mm
 8 along the Z-coordinate ($\Delta\text{RPM}_{\Delta Z} = +396$ rpm) as in Examples 1 and 2, accompanied
 9 this time by a negative movement of 7 mm along the Y-coordinate ($\Delta\text{RPM}_{\Delta Y} = -455$
 10 rpm), will result in a negative backspin change of about -59 rpm ($+396$ rpm - 455

EXAMPLE 3



11
 12
 13
 14
 15
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 22
 23
 24
 25
 26 rpm). This is now a **net decrease** in backspin because the contribution to backspin
 27 from the positive movement along the Z-coordinate is not enough to offset the
 28 decrease in backspin caused by the negative movement along the Y-coordinate.

1 Again, if it were assumed, as claimed in weighting strategy (c)(i), that positive
2 movement of the weighting means along the Z-coordinate would instead produce a
3 decrease in backspin while negative movement along the Y-coordinate would instead
4 produce an increase in backspin, then backspin would change by the same amount
5 except that it would be a **net increase** in backspin of about +59 rpm (-396 rpm +
6 455 rpm).

7
8 39. The actual numbers in the examples above are not important. They
9 were chosen as representative of the accused Taylor Made drivers. The key point of
10 these examples is that regardless of whether backspin increases or decreases with
11 weighting means movements along the Y- and Z-coordinates, it is clear that the
12 desired change in backspin in weighting strategy (c)(i) does **not** require the
13 movements along each coordinate to be **both** positive. As the examples above
14 illustrate, it is possible to achieve the desired change in backspin with a **positive**
15 weighting means movement along the Z-coordinate and a **negative** weighting means
16 movement along the Y-coordinate of the weighting means. It simply depends on
17 whether the backspin change from the positive movement along the Z-coordinate is
18 larger than the backspin change from the negative movement along the Y-coordinate.
19 This, in turn, is a function of (a) the amount of CG movement along each coordinate,
20 and (b) the rate of backspin change per mm of movement along each coordinate.

21
22 40. As demonstrated above, it would be incorrect to assert that the desired
23 change in backspin between a low Y, low Z coordinate to a high Y, high Z coordinate
24 can only be achieved if “an increase in a Z-axis value does not correspond to a
25 decrease in Y-axis value.” And, this conclusion is unaffected by which party is right
26 concerning whether backspin increases or decreases with positive movement of the
27 weighting means along the Y- and Z-coordinates.

1 41. The added language in element (c)(i) of claim 20, reciting that
2 decreasing backspin between a low Y, low Z coordinate to a high Y, high Z
3 coordinate requires that “an increase in a Z-axis value does not correspond to a
4 decrease in Y-axis value,” thus was not inherent in element (c)(i) of claim 9 in my
5 view. Adding the requirement that “an increase in a Z-axis value does not
6 correspond to a decrease in Y-axis value” gives claim 20 a different scope compared
7 to claim 9.

8
9 **Taylor Made’s Accused Products**

10 42. I am informed that Triple Tee has accused Taylor Made of infringing the
11 '660 patent based on Taylor Made’s manufacture and sale of its “R5, R7, R7 Quad
12 and Super Quad, R7 Limited, R7 CGB, R7 425, R7 460, R9, R9 TP, and R11 drivers
13 and related golf clubs including so-called M W T fairway woods, and Rescue clubs,”
14 as set forth in paragraph 13 of Triple Tee’s First Amended Complaint.

15
16 43. In connection with preparing this declaration, I have made inquiries to
17 confirm whether Taylor Made has discontinued the manufacture and importation of
18 each of the accused products listed above. I obtained information regarding the last
19 date that each of the accused “r” and “R” series clubs was made in the United States
20 or imported into the United States. I am informed that the information is maintained
21 internally in a software program entitled “Business Objects Software,” but that
22 certain information regarding the specific arrival in the United States for imported
23 products is available in customs forms and documents. I was provided information
24 from our Purchasing Manager in China and our Global Logistics Manager regarding
25 the last dates of importation into the United States for each of the accused “r” and “R”
26 series clubs. I also received information from our Manager of Global Planning
27 regarding the last dates of manufacture and assembly in the United States for each of
28

1 the accused "r" and "R" series clubs. The information is summarized in the table
2 below.

3 Accused Clubs	Last Manufacture In US Or 4 Import Into US
5 r5 Series	Prior to 2008
6 r7 series	October 2012
7 R9 Series	March 2013
8 R11 Series	December 2013

9 44. As shown, Taylor Made's last manufacture in this country or
10 importation into this country of each of the clubs occurred before the issuance of the
11 *ex parte* reexamination certificate for the '660 patent on June 12, 2014. I am
12 informed that Taylor Made does not have any plans at present to manufacture and/or
13 import any of the accused products in the future.

14 I declare under penalty of perjury under the laws of the United States of
15 America that the foregoing is true and correct.

16
17 Executed on November 11, 2014, at Carlsbad, California.

18
19 
20 Todd Beach
21
22
23
24
25
26
27
28

DECLARATION OF TODD BEACH

EXHIBITS – TABLE OF CONTENTS

EXHIBIT	DESCRIPTION	PAGE
A	“Placement of Center of Gravity for Best Spin and Launch Angle,” David Tutelman, dated August 16, 2013, available at http://www.tutelman.com/golf/clubs/centerOfGravity1.php	19

EXHIBIT A



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Placement of Center of Gravity for Best Spin and Launch Angle

Dave Tutelman -- August 16, 2013

The work I have done [analyzing vertical gear effect](#) tells the golfer where to hit the ball on the clubface for maximum distance. But it doesn't tell the club designer where to place the Center of Gravity (CG) of the clubhead, to make it as easy as possible for the golfer to hit the ball on a favorable clubface spot. This article addresses that question, as well as how CG location figures into custom fitting the driver.

In March of 2013, Jeff Summitt⁽¹⁾ emailed me about a clubhead design problem. (Jeff is the Chief Technical Officer for Hireko, and he designed most of the clubheads in my bag.) Rather than paraphrase the problem, let me quote a bit of Jeff's note.

We know that the lower the CG, the higher the ball will go with all else equal. Manufacturers (even Hireko) tout drivers to have a high launch with low spin to help optimize distance. We know there are limits to that, but bear with me for a second. If you read or hear from the manufacturers, many will say that moving the CG rearward will reduce spin, while others now are saying the opposite.

So... does moving the CG rearward reduce or increase spin? Good question!

Here is what is covered in this article, page by page:

1. What causes the changes of spin and launch angle, and how does CG location affect them? Here it is discussed from an intuitive and visual perspective. We're not getting quantitative yet.
2. I present a [spreadsheet](#) for computing spin and launch angle as we vary the CG location, and [graphs of performance](#) plotted by the spreadsheet.
3. The spreadsheet gave us some surprising numerical results. In particular, reduced backspin often did not result in increased distance. Sometimes, in fact, the distance dropped. Here we [summarize](#) what we have learned, figure out why the distance sometimes dropped, then apply it to proper [driver fitting](#).
4. The final page is the [math and physics](#) used in the spreadsheet; you can skip it if this is not your thing.

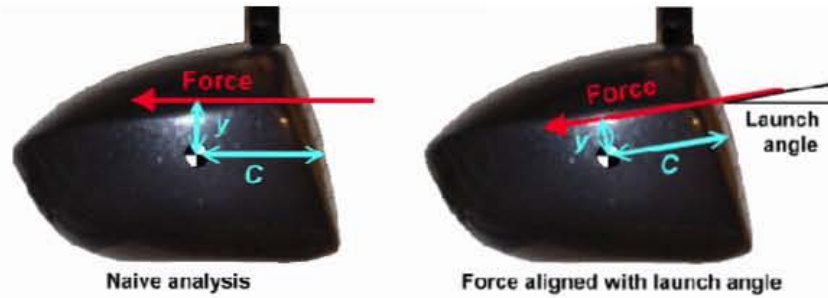
Visual explanation

My [previous work](#) on vertical gear effect has a naive answer; moving it rearward reduces spin, at least if you hit the ball high on the clubface as you are supposed to. Let's explain that. Backspin on a golf ball comes from two different effects at impact:

- The loft of the club provides a glancing blow, which causes backspin.
- The rotation of the clubhead -- gear effect -- will add backspin if the hit is below the center and add topspin if the hit is above the center.

A high hit on the clubface means the gear effect topspin is subtracted from the loft backspin, for a lower net total backspin. The higher on the clubface you hit the ball, the more the gear effect will reduce the backspin.

To see how the CG placement creates gear effect topspin, let's borrow a diagram from that article.



The gear effect spin is proportional to Cy , the multiplication of:

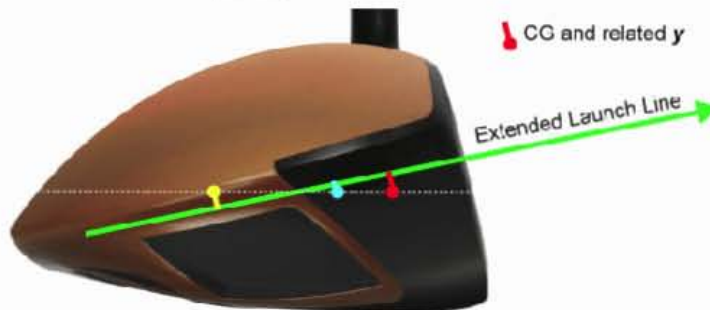
- C , the depth of the CG from the face, times
- y , the height above (or, if negative, below) the CG.

The left picture ("Naive analysis") makes it pretty clear.

- Moving the CG lower increases y , and thus increases the gear effect topspin.
- Moving the CG rearward increases C , also increasing gear effect topspin.

Case closed, right?

Not exactly. See the picture on the right ("Force aligned..."). C and y should really be measured in a direction aligned with the launch angle. When we do that, we still increase C by moving the CG rearward. But consider: a pure horizontal rearward movement of the CG will actually decrease y . Let's look at this a little more closely.



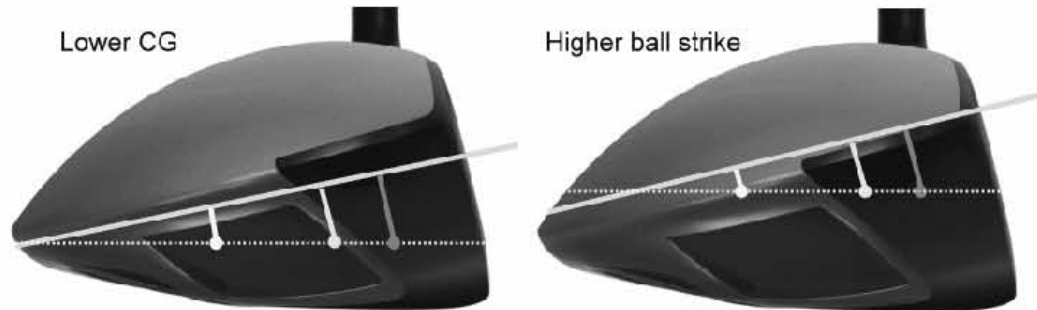
This picture^[2] shows what happens to y as we move the center of gravity rearward. The green arrow is the line of the ball's initial flight, extended in both directions from the point of impact on the face. The red, blue, and yellow circles are three possible positions of the CG, all at the same height (as indicated by the horizontal dotted line). Note that the three CG positions are much further apart than a club designer can actually accomplish; this is exaggerated to make a point.

Each CG position has a line of corresponding color drawn from the CG to the green arrow. That line is the y for that CG position. The C is the length of green arrow between the clubface and the position where the y -line intersects it. Let's look at each one:

- The **red CG** is the most forward position. The red y -line can be multiplied by C to estimate the gear effect topspin.
- If we move the CG rearward to the **blue position**, the y -line shrinks most of its value, while C increases somewhat. y shrinks by a larger percentage of its value than C increases, so C times y sees a net decrease. Thus the gear effect topspin is less, so the total backspin is higher. In this case, moving the CG rearward increased the total spin.
- If we continue moving the CG rearward to the **yellow position**, y has become negative. The reason is that the green extended launch line is now below the CG. The consequence is that C times y is negative, meaning that the gear effect spin is backspin. So the total backspin continues to increase as the CG is moved rearward.

This might not happen with all clubhead designs nor with all impact positions on the face. Sometimes moving the CG rearward increases spin and sometimes it decreases it. Let's see what we can surmise, however. See the pictures below for a visual demonstration of these rules of thumb.

1. The lower the CG of the clubhead, the more likely it is that moving the CG rearward will reduce total backspin.
2. The higher on the face the ball strikes, the more likely it is that moving the CG rearward will reduce total backspin.



As we can see from the diagrams, either lowering the CG or raising the ball strike point increases the value of y . Therefore, a given change in rearward position of the CG makes a smaller percentage decrease in y . (That is, the actual value of y changes as it did before -- but that is on top of a larger value of y to begin with. Thus the percentage change is smaller.)

Now remember that the gear effect is proportional to the product of C and y . From the diagram we see that, as we move the CG to the rear:

- The value of C increases.
- The value of y decreases.

So, if the percentage increase in C is bigger than the percentage decrease in y , we can get favorable gear effect and reduced backspin.

Reality check: when we get to numerical results, we will discover that it takes a lot of #1 and #2 so that rearward CG motion will reduce total backspin. For realistic designs, rearward CG motion results in higher backspin. For the designs we evaluate, reducing backspin involves moving the CG forward, not backward. Even then, the spin improvement is small, and disappears high on the face.

Launch angle

Along with the change in spin is a change in launch angle. Remember that the gear effect spin is due to the clubhead's rotation. If impact results in a positive y , then the clubface rotates upward. This will provide a higher loft during impact than was present when impact started. So we should expect the launch angle to be higher, probably by some amount proportional to the face rotation during impact.

The image shows the face rotating upwards, "geared" to the ball's spin. The rate at which the face rotates is:

- Proportional to the gear effect spin. Not the total spin, just that due to gear effect.
- Proportional to the distance from the face to the clubhead's CG -- which is C . The ratio of C to the radius of the golf ball is analogous to the gear ratio of a pair of spur gears. In a set of mating spur gears, the tooth pitch is the same in both gears, so the gear ratio is the same as the ratio of the pitch diameters. And the gear ratio determines the ratio of rotational speed.



There is another force which has to do with CG placement, in addition to gear effect, that is changing the loft of the club. As the club comes to impact, there is a substantial centrifugal force on the clubhead, pulling it outward from the center of rotation of the club. This force, shown red in the picture, acts on the center of gravity of the head. It is resisted by the pull of the shaft on the clubhead, shown green in the picture.

The important thing to note here is that the CG is further back than the hosel, so the two forces constitute a *turning moment* that wants to rotate the clubhead face up. The further back the CG, the greater this



turning moment. The flex of the shaft allows this to happen, at least to some extent.

So far, we have been explaining the effects in words. On the next page we will get quantitative, with a spreadsheet to show how much of an effect this is.

Notes:

1. Jeff Summitt is the Chief Technical Officer for [Hireko](#), and does their clubhead design as well as running their technical blog and support forum. Hireko's brands include Dynacraft, Acer, Apollo, and SK Fiber, among others. So you may not have heard of Hireko, but their brands are well-respected in custom clubfitting. (As of this writing in August 2013, eleven of the clubs in my bag are made with Jeff Summitt designed clubheads and Hireko-brand or Hireko-sold shafts.) Jeff is also known in the industry for having co-authored (with Tom Wishon) the 1990 book, "[The Modern Guide to Shaft Fitting](#)", one of the earlier books that looks at the science of what makes a golf club work.
2. This diagram is drawn on top of a picture of Hireko's XS driver. An appropriate choice, since Jeff raised the question during a discussion of this new design. Well, actually we were discussing the XS titanium three-metal. The head was designed to have an unusually low CG, as this article recommends. I currently have the XS titanium three-metal in my bag, and it is the best fairway wood I've ever used.

Last updated - Mar 11, 2014

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UNITED STATES DISTRICT COURT FOR
THE SOUTHERN DISTRICT OF CALIFORNIA

Case No. 11-CV-2974 JLS(WVG)

Triple Tee Golf, Inc.,
a Florida Corporation,

Plaintiff,

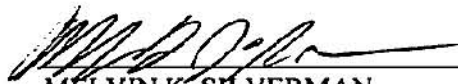
NOTICE OF APPEAL

v.

Taylor-Made/Adidas,
a Delaware Corporation,

Defendant.

Notice is hereby given that Triple Tee Golf, Inc., hereby appeals to the United States Court of Appeals for the Federal Circuit from an Order Granting Defendant's Motion for Summary Judgment entered in this action on the March 23, 2015.



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Counsel for Defendant



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/002,052	07/20/2012	7854667	0EKM-168547	1031

27353	7590	05/30/2014
MELVIN K. SILVERMAN & ASSOCS.		
1000 West McNab Road, Suite 308		
Pompano Beach, FL 33069		

EXAMINER	
GRAHAM, MATTHEW C	

ART UNIT	PAPER NUMBER
3993	

MAIL DATE	DELIVERY MODE
05/30/2014	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAYLOR MADE GOLF COMPANY, INC.
Third Party Requester

v.

TRIPLE TEE GOLF, INC.
Patent Owner/Appellant

Appeal 2014-002459
Reexamination Control 95/002,052
US Patent No. 7,854,667 B2¹
Technology Center 3900

Before: STEVEN D.A. McCARTHY, DANIEL S. SONG, and
BRETT C. MARTIN, *Administrative Patent Judges*.

MARTIN, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ Issued to John P. Gillig on December 21, 2010 (hereinafter referred to as the '667 patent).

Appeal 2014-002459
Reexamination Control 95/002,052
US Patent No. 7,854,667 B2

ANALYSIS

Only those arguments actually made by the appellant(s) have been considered and arguments that the parties did not make are deemed to be waived. *See* 37 C.F.R. § 41.67(c)(1)(vii).

Claim Interpretation

Patent Owner couches the main issue in this appeal as a disagreement over the proper interpretation of the claims, or as the Patent Owner refers to it, "the adjustability issue." App. Br. 1; *see also* App. Br. 2-15. According to the Patent Owner, the claims, "in clear and unequivocal language, set forth that the adjustability within the axes is necessary to satisfy one or more particular weighting strategies." App. Br. 2. Patent Owner then goes on to cite several passages, all of which notably refer to a "weighting element *secured* substantially within said void space." *Id* (emphasis added). Patent Owner further argues that "[i]t is not possible to have a 'golf club adjustment system' without the capability for adjustment along all respective coordinates and combinations thereof that define the system." App. Br. 3.

We find this to be a mischaracterization of the Examiner's rejection which explicitly incorporates by reference the proposed rejection as initially set forth by Requester in its Request for *Inter Partes* Reexamination. *See* RAN 2. Requester's original rejection proposal with regard to Dammen clearly explains how Dammen's weights are adjustable in both the Y and Z directions. *See* Request for *Inter Partes* Reexamination of U.S. Patent No. 7,855,667 dated July 20, 2012, pp. 32-34 and Exh. D-1. As Requester points out, Dammen teaches that "[t]he length of the screw weight 7 is shorter than the length of the tubular sleeve, so as to allow it to be screwed back and

Appeal 2014-002459
Reexamination Control 95/002,052
US Patent No. 7,854,667 B2

prior art teaching of a weighting element secured at a fixed point within the claimed range would be sufficient for anticipation.

Appellant further argues that the claims should be interpreted to require weight adjustability because, for example, the claims recite "user replaceable weighting elements for adjusting said center of gravity," such as is recited in claim 17. Similar language regarding replaceability is found in claims 1 and 8 as well. Replaceability, however, is not the same as adjustability. The weights disclosed in Dammen are screws that may be removed and replaced, which meets the actual limitation. *See, e.g.,* Dammen p. 4, ll. 19-25. Again, though not required by the claims as written, the weights of Dammen may also be adjusted within the sleeves to adjust the center of gravity. Dammen's replaceability alone adjusts the center of gravity in that the club has a different center of gravity with weights than it does without weights. It also may have a different center of gravity if one set of weights is replaced with a different set of weights. The only adjustment referred to in the context of replaceability is that of adjusting the entire club. Dammen's user-replaceable weights accomplish this claimed feature.

Throughout its brief, Patent Owner refers to the Specification as explaining how the invention is intended to cover adjustable weights. *See, e.g.,* App. Br. 9. While we agree that the Specification describes at length the proposed adjustability, nothing in the claim language specifically requires adjustability. Furthermore, as Requester points out, the Specification also refers to embodiments where the weights are not adjustable. *See* Resp. Br. 7.

Appeal 2014-002459
Reexamination Control 95/002,052
US Patent No. 7,854,667 B2

forth in the tubular sleeve as desired." Dammen, 4:21-23. Requester further notes that "the screw weights 7 may be placed at any position between the ends of the tubular sleeves 1." Request for *Inter Partes* Reexamination at 33. Dammen also discloses that "[t]he tubular sleeve or sleeves ... are positioned at an angle up towards the centre 4 of the striking surface (front face)." Dammen, 4:14-17; fig. 1; *see also* Exh. D-1. Thus, as the positions of the screw weights of Dammen are adjusted along the Y axis, their positions along the Z axis are also simultaneously adjusted.

While Dammen may not teach adjustability into the Z3 region as depicted both in the Requester's marked up figures of Dammen as well as Patent Owner's figures, this point is moot because the claims do not require adjustability across the entire range of the various axes within the void space. All that is required is "a lower Z coordinate" and a "higher Z-coordinate." Dammen discloses a lower Z coordinate when the weights are further from the striking surface, and a higher Z coordinate when the weights are closer to the striking surface. *See* Dammen, fig. 1.

While the above findings and discussion with respect to Dammen establish a sufficient basis for affirming the Examiner's rejection, as explained further below to address Patent Owner's arguments, the claims actually do not require adjustability. As Requester correctly points out, "[t]he claims contain no requirement of a capability of moving or adjusting a weighting element along or within the claimed range." Resp. Br. 7. As noted above, the claims specifically require that the weighting element be "secured" within the void space. Accordingly, even if Dammen were to teach no adjustment whatsoever, which as noted *supra* is not the case, such a

PTO/SB/57 (07-12)

Approved for use through 02/28/2013. OMB 0651-0064

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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(Also referred to as FORM PTO-1465)

REQUEST FOR EX PARTE REEXAMINATION TRANSMITTAL FORM

Address to:

Mail Stop Ex Parte Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attorney Docket No.: 0EKM-175906Date: February 6, 2013

1. ☒ This is a request for *ex parte* reexamination pursuant to 37 CFR 1.510 of patent number 7,128,660 issued October 31, 2006. The request is made by:
☐ patent owner. ☒ third party requester.
2. ☒ The name and address of the person requesting reexamination is:
Taylor Made Golf Company, Inc.
5545 Fermi Court
Carlsbad, California 92008
3. ☐ a. A check in the amount of \$_____ is enclosed to cover the reexamination fee, 37 CFR 1.20(c)(1),
☒ b. The Director is hereby authorized to charge the fee as set forth in 37 CFR 1.20(c)(1) to Deposit Account No. 19-1853,
☐ c. Payment by credit card. Form PTO-2038 is attached; or
☐ d. Payment made via EFS-Web.
4. ☒ Any refund should be made by ☐ check or ☒ credit to Deposit Account No. 19-1853 37 CFR 1.26(c). If payment is made by credit card, refund must be to credit card account.
5. ☒ A copy of the patent to be reexamined having a double column format on one side of a separate paper is enclosed. 37 CFR 1.510(b)(4)
6. ☐ CD-ROM or CD-R in duplicate, Computer Program (Appendix) or large table
☐ Landscape Table on CD
7. ☐ Nucleotide and/or Amino Acid Sequence Submission
If applicable, items a. - c. are required.
a. ☐ Computer Readable Form (CRF)
b. Specification Sequence Listing on:
i. ☐ CD-ROM (2 copies) or CD-R (2 copies); or
ii. ☐ paper
c. ☐ Statements verifying identity of above copies
8. ☐ A copy of any disclaimer, certificate of correction or reexamination certificate issued in the patent is included.
9. ☒ Reexamination of claim(s) 1 and 9 is requested.
10. ☒ A copy of every patent or printed publication relied upon is submitted herewith including a listing thereof on Form PTO/SB/08, PTO-1449, or equivalent.
11. ☐ An English language translation of all necessary and pertinent non-English language patents and/or printed publications is included.

[Page 1 of 2]

This collection of information is required by 37 CFR 1.510. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Mail Stop Ex Parte Reexam, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

A749

PTO/SB/57 (02-09)

Approved for use through 02/28/2013. OMB 0651-0064

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

12. <input checked="" type="checkbox"/> The attached detailed request includes at least the following items: <ul style="list-style-type: none"> a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.510(b)(1) b. An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited art to every claim for which reexamination is requested. 37 CFR 1.510(b)(2). 		
13. <input type="checkbox"/> A proposed amendment is included (only where the patent owner is the requester). 37 CFR 1.510(e)		
14. <input checked="" type="checkbox"/> It is certified that the statutory estoppel provisions of 35 U.S.C. 315(e)(1) or 35 U.S.C. 325(e)(1) do not prohibit requester from filing this <i>ex parte</i> reexamination request. 37 CFR 1.510(b)(6)		
15. <input checked="" type="checkbox"/> a. It is certified that a copy of this request (if filed by other than the patent owner) has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c). The name and address of the party served and the date of service are: Melvin Silverman, Esq. M.K. Silverman & Associates, P.C. 500 West Cypress Creek Road, Ste. 350 Ft. Lauderdale, FL 33309 (with a copy to Melvin Silverman, Esq. M.K. Silverman & Associates, P.C., One Gateway Center, Ste. 2600, Newark, NJ 07102) Date of Service: <u>February 6, 2013</u> ; or <input type="checkbox"/> b. A duplicate copy is enclosed because service on patent owner was not possible. An explanation of the efforts made to serve patent owner is attached. See MPEP § 2220.		
16. Correspondence Address: Direct all communications about the reexamination to:		
<input checked="" type="checkbox"/> The address associated with Customer Number:		30764
OR <input type="checkbox"/> Firm or Individual Name _____		
Address _____		
City _____	State _____	Zip _____
Country _____		
Telephone _____		Email _____
17. <input checked="" type="checkbox"/> The patent is currently the subject of the following concurrent proceeding(s): <ul style="list-style-type: none"> <input type="checkbox"/> a. Copending reissue Application No. _____ <input checked="" type="checkbox"/> b. Copending reexamination Control No. <u>95/002,049</u> <input type="checkbox"/> c. Copending Interference No. _____ <input checked="" type="checkbox"/> d. Copending litigation styled: <u>Triple Tee Golf, Inc. v. Taylor-Made/Adidas</u> <u>Case No. 11-CV-2974-JLS (WVG)</u> 		
WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.		
_____ Authorized Signature		<u>February 6, 2013</u> Date
<u>Gary A. Clark</u> Typed/Printed Name		28,060 Registration No.
		<input type="checkbox"/> For Patent Owner Requester <input checked="" type="checkbox"/> For Third Party Requester

(Page 2 of 2)

A750

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Control No.: N/A Confirm No. N/A
Patent No.: 7,128,660
Issued: October 31, 2006
Title: METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT
AND ARTICLES RESULTANT THEREFROM
Inventor: John P. Gillig
Docket No.: 0EKM-175906
Date: February 6, 2013

REQUEST FOR EX PARTE REEXAMINATION
OF U.S. PATENT NO. 7,128,660

Assistant Commissioner for Patents
Box Reexam
Washington, D.C. 20231

Sir,

Requester, Taylor Made Golf Company, Inc., hereby requests *ex parte* reexamination of U.S. Patent No. 7,128,660 ("the '660 patent") entitled "Method of Golf Club Performance Enhancement and Articles Resultant Therefrom," which issued on October 31, 2006, in the name of John P. Gillig as inventor.

In accordance with the requirements of 37 C.F.R. § 1.510(b)(1)-(5):

- (a) An identification of every claim of the '660 patent for which reexamination is requested, along with an identification of the prior art that demonstrates the unpatentability of the claims, is presented in section I of this Request.
- (b) A list of any prior or concurrent proceedings involving the '660 patent is presented in section II of this Request.

- (c) A statement pointing out each substantial new question of patentability is presented in section III of this Request.
- (d) A detailed explanation of the pertinency and manner of applying the cited prior art to every claim for which reexamination is requested is presented in section IV of this Request, including the claim chart attached as Appendix A to this Request.
- (e) A copy of every patent or printed publication relied upon or referred to is submitted herewith.
- (f) A copy of the entire patent for which reexamination is requested is submitted herewith.
- (g) A certification that a copy of the Request has been served in its entirety on the patent owner is submitted herewith.

I. Identification of Claims for Which Reexamination Is Requested

In accordance with 37 C.F.R. § 1.510(b)(2), Requester seeks reexamination of claim 9 and, necessarily, the claim from which it depends, claim 1, of the '660 patent in view of PCT Publication No. WO 01/66199 to Dammen ("Dammen").

II. Concurrent Proceedings Involving The '660 patent Pursuant to 37 C.F.R. § 1.565

Pursuant to 37 C.F.R. § 1.565, Requester identifies the following concurrent proceedings involving the '660 patent:

- (a) On December 20, 2011, the Patent Owner filed a lawsuit against Requester for alleged infringement of the '660 patent and a related patent, U.S. Patent No. 7,854,667 ("the '667 patent"), in the U.S. District Court for the Southern District of California, Case No. 11-CV-2974-JLS (WVG), entitled *Triple Tee Golf, Inc. v. Taylor-Made/Adidas*. The '667 patent issued from an application

filed as a continuation-in-part of the application for the '660 patent. The litigation has been stayed pending the outcome of the Requests for *Inter Partes* Reexamination of the '660 and '667 patents identified below.

- (b) On July 20, 2012, Requester filed a REQUEST FOR *INTER PARTES* REEXAMINATION OF U.S. PATENT NO. 7,128,660 in the U.S. Patent and Trademark Office, Control No. 95/002,049. An Order granting the Request was mailed on September 25, 2012, along with a first Office Action rejecting claims 1-6, 8, 10-14 and 16-18 of the '660 patent under 35 U.S.C. §§ 102(b) & (e) in view of several prior art references. The Examiner did not grant the Request for *Inter Partes* Reexamination as to claim 9 of the '660 patent, and Dammen was not included as a prior art reference in that Request for *Inter Partes* Reexamination.

Requester notes that on July 20, 2012, it also filed a REQUEST FOR *INTER PARTES* REEXAMINATION OF U.S. PATENT NO. 7,854,667 in the U.S. Patent and Trademark Office, Control No. 95/002,052. An Order granting that Request was mailed on August 10, 2012, along with a first Office Action rejecting claims 1-18 of the '667 patent under 35 U.S.C. §§ 102(b) or 103(a) as anticipated by or obvious in view of Dammen.

The above-identified requests for *inter partes* reexamination of the '660 and '667 patents were both assigned to Examiner Matthew C. Graham.

III. Statement Pointing Out Each Substantial New Question of Patentability

In accordance with 37 C.F.R. § 1.510(b)(1), Requester submits that dependent claim 9 and, of necessity, independent claim 1 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Dammen.

In section III.A below, Requester provides an overview of the '660 patent. In section III.B, *infra*, Requester addresses issues of claim construction that are raised by this

reexamination request. In section III.C, *infra*, Requester shows that the earliest priority date of the claims of the '660 patent is April 3, 2004, the filing date of the application for the '660 patent. In other words, none of the claims of the '660 patent are entitled to the benefit of the filing date of any earlier application referenced in the '660 patent application. In section III.D, *infra*, Requester discusses that Dammen raises a substantial new question of patentability regarding claims 1 and 9 of the '660 patent, and renders both claims invalid.

A. Overview of the '660 patent

The '660 patent relates to “a method of selectably varying the center of gravity and distribution of weighting in a void space in the head of a golf club.” ('660 patent, col. 1, lines 19-21.) The Abstract succinctly summarizes the subject matter of the '660 patent:

The performance of a golf club may be enhanced through the provision of a void space behind a face plate and above the sole plate, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space. The weighting coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball backspin, trajectory, penetration and hook or slice may be modified through the use of a definable weighting strategy.

(*Id.*, Abstract.)

While acknowledging others’ “recognition of the importance of proper weighting within the head of a golf putter to compensate for physiologic needs and preferences of a golfer” ('660 patent, col. 1, lines 50-53), the applicant asserts that he discovered

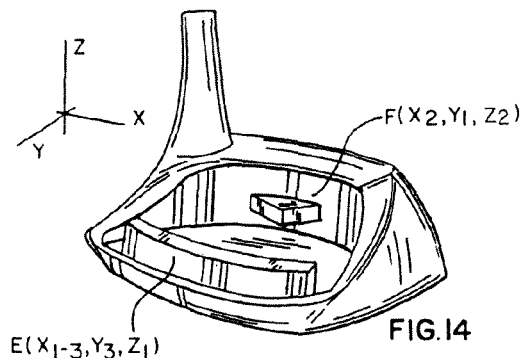
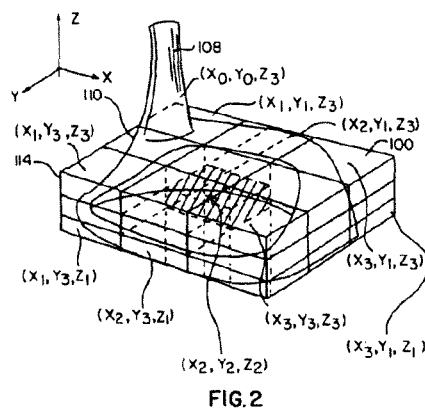
many more options for positioning of the CG [center of gravity] and distribution of weight or weights within the head of a golf club, whether that club comprises an iron, a wood, or a hybrid thereof, in positioning, behind the club face, selectable high density weighting elements at coordinates of an orthonormal matrix up to 27 potential locations in a void space, to thus compensate for physiologic imperfections in one or more characteristic of the swing of a golfer.

(*Id.*, col. 1, line 65 – col. 2, line 5.) To this end, the applicant described the primary object of his invention as

to provide a golf club having a weight modifiable club head, inclusive of interchangeable sole plates and/or weighting elements, which express a universal method of golf club head modification to account for ball backspin, penetration, trajectory, and hook or slice.

(*Id.*, col. 2, lines 62-67.)

Figures 2 and 14, reproduced below, are representative of the manner in which the applicant applies an X, Y, Z orthonormal coordinate system to a golf club head to identify the various locations in which he provides weighting elements to modify the club head:



B. Claim Construction

Requester seeks reexamination of dependent claim 9 and, of necessity, the claim from which it depends, independent claim 1. Claims 1 and 9 of the '660 patent read as follows:

1. A method of enhancing performance of a golf club, the method comprising the steps of:
 - (a) providing a void space behind a face plate of said club and above a sole portion thereof;
 - (b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said

club, and an increase in Z-axis value corresponds to increase in height above said sole portion;

- (c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:
 - (i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin;
 - (ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;
 - (iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or
 - (iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice,

thereby enhancing performance of said club.

....

9. The method of enhancing performance of a golf club as recited in claim 1, in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

('660 patent, col. 7, line 44 – col. 8, line 49.)

During reexamination, claims are given their “broadest reasonable interpretation” consistent with the specification. MPEP § 2258(G) (*citing In re Yamamoto*, 740 F.2d 1569, 222 USPQ 934 (Fed. Cir. 1984)). This is not the broadest interpretation, but rather one that would be considered reasonable by a person of ordinary skill in the art. *In re Am. Academy Of Science Tech Ctr.*, 367 F.3d 1359, 1368, 70 USPQ.2d 1827, 1830 (Fed. Cir. 2004). Thus, the

discussion below is directed to the broadest reasonable interpretation of the terms and phrases consistent with the specification.

1. “Sole portion”

Independent claim 1 of the '660 patent recites the claim term “sole portion.” ('660 patent, col. 7, line 47.) The applicable ordinary definition of “sole” is “the usually flat or flattened bottom or lower part of something or the base on which something rests.” <http://www.merriam-webster.com/dictionary/sole>. As applied to a golf club head, “sole” means “The part on which something else rests while in a vertical position, especially: ... The bottom surface of the head of a golf club.” <http://education.yahoo.com/reference/dictionary/entry/sole>. See also <http://www.golf-components.com/golf-club-irons-terms.html> (“The bottom or underside of any type of golf club. It is where the club rests on the ground in playing position.”). The applicable ordinary definition of “portion” is “an often limited part of a whole.” <http://www.merriam-webster.com/dictionary/portion>. Thus, the broadest reasonable interpretation of “sole portion” is the bottom or underside part of the golf club head where it rests on the ground in the playing position.

2. “Providing a void space...”

Independent claim 1 of the '660 patent recites the step of “(a) providing a void space behind a face plate of said club and above a sole portion thereof.” ('660 patent, col. 7, lines 46-47.) The applicable ordinary definition of “void” is “not occupied: vacant” or “containing nothing.” <http://www.merriam-webster.com/dictionary/void>. The applicable ordinary meaning of “space” is “a limited extent in one, two, or three dimensions: distance, area, volume.” <http://www.merriam-webster.com/dictionary/space>. Pursuant to the broadest reasonable interpretation, this limitation means providing a limited volume behind the face plate and above the plane defined by the portion of the golf club head where it rests on the ground in the playing position that is vacant.

3. “Applying a virtual X, Y, Z orthonormal coordinate system...”

Independent claim 1 of the '660 patent recites the step of:

(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a

forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion.

('660 patent, col. 7, lines 48-59.)

The relationship between the X, Y, Z orthonormal coordinate system and the golf club head is indefinite because the claim limitations are unclear how the club head relates to the coordinate system. In particular, it is unclear if the main body of the golf club head (excluding the hosel) is required to be contained entirely within and touching each of the three planes formed by the X, Y, and Z axes at the origin of the coordinate system. It is also unclear how the club head is intended to be oriented in the coordinate system relative to those three planes. Although the examples in the '660 patent seem straightforward, with the golf club heads oriented in which appear to be normal address position, the actual claim limitations are anything but clear.

Claim 1 also recites that “said sole portion is *partially congruent* with a bottom-most xy plane” of the X, Y, Z orthonormal coordinate system. ('660 patent, col. 7, lines 49-51; emphasis added.) The applicable ordinary meaning of “congruent” is “superposable so as to be coincident throughout.” <http://www.merriam-webster.com/dictionary/congruent>. This limitation thus requires the sole portion of the golf club to be substantially coincident throughout a bottom most XY plane. This does not present any issues in the '660 patent embodiments because the soles are perfectly flat and are shown completely coincident with the XY-plane (*e.g.*, Figs. 7 & 9). It is unclear, however, how a typical golf club having a curved sole (*see, e.g., Dammen*, Figs. 1, 6 & 7) is supposed to be oriented relative to the XY-plane if it is not possible for a curved sole to be coincident throughout a plane.

For another thing, claim 1 recites that “said face plate *intersects* a forward-most XZ plane” of the X, Y, Z orthonormal coordinate system, and “a heel and hosel side of said club *intersects* a YZ plane thereof substantially at an origin of said coordinate system.” ('660 patent, col. 7, lines 51-54; emphasis added.) The applicable ordinary meaning of “intersect” is “to meet and cross at a point.” <http://www.merriam-webster.com/dictionary/intersect>. This limitation

thus requires the face plate of the golf club to meet and cross the XZ-plane, and the heel and hosel side of the golf club to meet and cross the YZ-plane.

Again, however, claim 1 does not specify the orientation of the golf club to the XZ- or YZ-planes, or what portions of the face plate or the heel and hosel side cross their respective planes, or by how much. The drawing figures in the '660 patent are not helpful in this regard. First, because almost all golf clubs have a loft (*i.e.*, the face plate is angled backward relative to the sole), the face plate generally will be angled relative to the XZ-plane. In the disclosed embodiments of the '660 patent, none of the drawing figures show the relationship between the angled face plate and the normal XZ-plane.

Second, Figs. 7 & 9 of the '660 patent show the heel essentially tangent to the YZ-plane, with the hosel extending beyond the YZ-plane. However, none of the drawing figures show the heel crossing (*i.e.*, intersecting) the YZ-plane, and although the hosel extends beyond the XZ-plane, the hosel never actually intersects that plane because it is above the entire coordinate system as depicted in the drawing figures.

In light of the uncertainties created by the claim language, Requester submits that step (b) of claim 1 can be met by various orientations of a club head in the coordinate system. In fact, there may be a limitless number of club head orientations that satisfy this step, which, in turn, may affect the determination of the coordinate positions of any weighting means and whether they satisfy the weighting means coordinate position limitation in the claim.

Because these indefiniteness concerns cannot be addressed in a reexamination proceeding, Requester will apply an X, Y, Z orthonormal coordinate system to the prior art using the examples in the '660 patent (Figs. 2 & 6-12) as a guide, *i.e.*, with the golf club heads oriented approximately in the normal address position. This approach is based on the principles that (i) the claims should be interpreted, if at all possible, to cover one or more of the disclosed embodiments, *Johns Hopkins Univ. v. CellPro, Inc.*, 152 F.3d 1342, 1355, 47 USPQ.2d 1705, 1714 (Fed. Cir. 1998) ("patent claim should be construed to encompass at least one disclosed embodiment in the written description portion of the patent specification"), and (ii) all that Requester needs to show is that the prior art anticipates or renders obvious subject matter falling within the scope of the claims, *In re Slayter*, 276 F.2d 408, 411, 125 USPQ 345, 347 (CCPA 1960) ("A generic claim cannot be allowed to an applicant if the prior art discloses a species

falling within the claimed genus.”); *see also Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 971, 1880 USPQ.2d 1869, 1878 (Fed. Cir. 2001) (noting that a “genus claim limitation is anticipated by, and therefore not patentably distinct from, a[] ... species claim”).

4. “Weighting means”

Claims 1 and 9 each recite the claim phrase “weighting means.” “Weighting means” is a section 112(6) limitation whose specified function is “weighting” or “providing weight at a location in the golf club head.” Nothing in the claims specifies whether the “weighting means” are fixed or movable/replaceable, or whether they are separate from or integrally formed with the golf club. The corresponding structures described in the specification include both separate weights and weights that are integrally formed with the golf club. The ‘660 patent appears to describe use of separate weights in conjunction with Figs. 14-20, but the specification also states that “many of the above functions of the weighting elements may be achieved thru variation in weight and dimension of sole plate 106 (see FIG. 1).” (‘660 patent, col. 7, lines 25-27.) This is confirmed by the recitation in dependent claims 3, 4 and 6 that “said weighting means comprises golfer-replaceable elements,” which implies that independent claim 1 is not limited to golfer-replaceable weighting means, but may include fixed or permanent weights (*e.g.*, thicker walls).

If “weighting means” is not interpreted as a means clause limitation, Requester submits that this has no effect on claim scope because the claim language is sufficiently broad to cover any weights – separate or integral, fixed or movable/replaceable – again taking into account claim differentiation with dependent claims 3, 4 and 6.

5. Claimed coordinates of the “weighting means”

The weighting strategies in independent claim 1 require weights to be provided within the void space between specified high and low coordinates of an X, Y, Z orthonormal coordinate system. For example, step (c)(i) of claim 1 recites a weighting strategy that requires providing weighting means in a range “between a low Y, low Z coordinate ... to a high Y, high Z coordinate ...” (‘660 patent, col. 7, line 66 – col. 8, line 2.)

Neither the specification nor the claims of the ‘660 patent make clear what constitutes “high” and “low.” In all of the patent embodiments, the X, Y, Z orthonormal

coordinate system is divided into thirds along each axis, creating a 3x3x3 matrix of 27 cells. (See Figs. 2-13 & 23-24.) In the specification of the '660 patent, the applicant states,

The present inventive method reflects my discovery that many more options for positioning of the CG and distribution of weight or weights within the head of a golf club, whether that club comprises an iron, a wood, or a hybrid thereof, in positioning, behind the club face, selectable high density weighting elements at coordinates of an orthonormal matrix up to *27 potential locations in a void space*, to thus compensate for physiologic imperfections in one or more characteristic of the swing of a golfer.

('660 patent, col. 1, line 64 – col. 2, line 5, emphasis added.) However, the '660 patent claims contain no explicit requirement that the coordinate system have a 3x3x3 configuration. At most, claim 7 of the '660 patent, which depends from claim 1, refers to Y2, Y3 and Z2 coordinate positions without specifically defining them, as though it is understood that the coordinate system of claim 1 is a 3x3x3 matrix.

Additionally, during prosecution, the applicant equated “low” and “high” with the first and third cells of a 3x3x3 coordinate system, respectively. Specifically, in remarks related to application claim 37, which became claim 11 and has similar “low” and “high” coordinate references, the applicant stated that “[c]orrection of ballooning only requires adjustability in a line at a medium X-position between a high Y, high Z coordinate to a low Y, low Z coordinate. See Figs. 5 and 13.” (4/27/06 Amendment, p. 15.) In the specification of the '660 patent, Fig. 13 associates “MAX. BALOONING” [sic] with the position “(X2, Y1, Z1)” and “MIN. BALOONING” [sic] with the position “(X2, Y3, Z3).” Thus, the prosecution history makes clear that “medium X-position” refers to X2, “high Y, high Z coordinate” refers to Y3, Z3, and “low Y, low Z coordinate” refers to Y1, Z1. Accordingly, Requester applies that interpretation here.

The specification also fails to make clear whether a claim requirement for a weighting means having a specified coordinate, *e.g.*, a low Z (Z1) coordinate, is satisfied by a weight that spans multiple coordinates including the specified one, *e.g.*, a low to high Z (Z1-Z3) coordinate. Nothing in the claim precludes this, and dependent claim 7 confirms that it is satisfied by a weight that spans multiple coordinates. In this regard, claim 7 provides that step (c)(ii) of claim 1 can be satisfied “by securing a strip-like weighting element over said void

space at about a (Y2-Y3, Z2) position” ('660 patent, col. 8, lines 35-37.) Step (c)(ii) of claim 1 requires a weighting means “between a high Y, high Z coordinate ... to a low Y, low Z coordinate,” or between Y3, Z3 position to a Y1, Z1 position. (*Id.*, col. 8, lines 3-6.) It is thus plain from claim 7 that a weight having a Y2-Y3, Z2 position qualifies as a Y2-Z2 position in satisfaction of step (c)(ii) of claim 1.

Lastly, it is clear that the weight location ranges specified in claim 1 is satisfied by providing a weighting means in at least one position within the specified range along an axis; in other words, the claims contain no requirement of a capability of providing or moving a weighting means over the entirety of the range.¹ What this means is that it is unnecessary to resolve what “low” and “high” mean to the extent a golf club head (*e.g.*, the prior art) has a weighting means somewhere along the specified axis between the lowest and highest possible locations because this will satisfy such limitations.

6. “Selectably employing two of the following club weighting strategies ...”

Step (c) of claim 1 recites the step of

(c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:

('660 patent, col. 7, lines 60-65.) As the strategies that follow in steps (c)(i)-(iv) make clear, “weighting strategies” refers to the selection of locations on the golf club head for providing (adding) weighting means.

Nothing in claim 1 limits the weighting strategies as to when (*e.g.*, during design, manufacture, or use) or by whom (*e.g.*, designer, manufacturer, or user) they are selected or implemented.

¹ To the extent that the '660 patent supports the entire ranges over the three axes, X, Y and Z, it does so by disclosing different embodiments with weights in various locations. The '660 patent does not disclose any individual embodiment in which weights can be provided at, or moved to, any location in the club head over the entire range, from lowest to highest, along all three axes.

Also, nothing in claim 1 precludes the use of more than two weighting strategies. In fact, dependent claim 8 confirms that three strategies may be used by reciting that the method of selectably employing two club weighting strategies in claim 1 may comprise “employing three of said strategies.” (’660 patent, col. 8, lines 44-45.) If independent claim 1 were limited to two, *and only two*, weighting strategies, it could not properly be broadened by a dependent claim to encompass more than two strategies. *See* 35 U.S.C. § 112, fourth paragraph (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”); *Pfizer, Inc. v. Ranbaxy Laboratories Ltd.*, 457 F.3d 1284, 1291-92, 79 USPQ.2d 1583, 1589-90 (Fed. Cir. 2006) (holding dependent claim invalid for failure to comply with section 112 (¶ 4) because it did not narrow the scope of the claim from which it depended).

Nothing in claim 1 further precludes using a single weighting means to implement multiple strategies. To the contrary, dependent claim 10 confirms that a single weighting means can be used for multiple weighting strategies by reciting that in the method of claim 1, “a weighting means of a first selected strategy may be integral with that of a second selected strategy.” (’660 patent, col. 8, lines 51-53.) As the applicant explained in the prosecution history, such a single weighting means may be large enough to span multiple Y coordinates (*e.g.*, ’660 patent, Fig. 19) so that it also satisfies claim 1’s requirement that “a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy.” (*See* 4/27/06 Amendment, pp. 14-15.)

It is unclear, though, how the requirement that “a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy” applies if the weighting means spans multiple coordinates, *e.g.*, Y1-Y2 or Z1-Z3. Requester submits that the broadest reasonable interpretation requires selection of the coordinate from the multiple coordinates spanned by the weighting means that is used to satisfy the selected strategy (assuming that the selected strategy specifies a Y coordinate). Thus, if the strategy is to place a weighting means at a medium Y, medium Z coordinate, and the weighting means has a Y2-Y3, Z2 coordinate, the selected value of Y would be Y2 because it is the Y coordinate selected for the strategy. In support, Requester notes that dependent claim 7 makes clear that a weight having a Y2-Y3, Z2 position qualifies as a Y2-Z2 position in satisfaction of step (c)(ii) of

claim 1. *See* section III.B.5., *supra*, p. 12. If the selected strategy does not specify a Y coordinate, then either the requirement is inapplicable or any Y coordinate may be selected.

7. “At least one weighting means thereof is not contiguous to any part of said face plate”

Independent claim 1 recites the limitation that “at least one weighting means thereof is not contiguous to any part of said face plate ...” (’660 patent, col. 7, lines 61-63.) The ordinary meaning of “contiguous” is “being in actual contact: touching along a boundary or at a point.” <http://www.merriam-webster.com/dictionary/contiguous>. Thus, this limitation of claim 1 means that at least one weight means or weight is not in actual contact with the face plate.

8. “To modify backspin”; “to modify ball penetration”; “to modify ball trajectory”; “to compensate for ball hook or slice”

Claim 1 recites weighting strategies that include the following functional language: (1) “to modify backspin” (claim 1, step (c)(i)); (2) “to modify ball penetration” (claim 1, step (c)(ii)); (3) “to modify ball trajectory” (claim 1, step (c)(iii)); and (4) “to compensate for ball hook or slice” (claim 1, step (c)(iv)). This functional language merely describes the intended result of placing a “weighting means” at the coordinates specified in the limitation.

In principle, if the location of the CG of the golf club head relative to the CG of the golf ball on impact is changed – that is, if the club head’s CG is moved up or down, forward or back, and/or left or right – certain changes in ball flight characteristics naturally occur according to the laws of nature. Simple mechanics dictate the result on ball flight characteristics that follow from these changes in the CG of the club head. This functional language in the claims thus simply describes the natural result of placing weighting means at the claimed location(s) and, therefore, is not a claim limitation. *Bristol-Myers Squibb v. Ben Venue Labs.*, 246 F.3d 1368, 1375, 58 USPQ.2d 1508, 1513 (Fed. Cir. 2001) (holding that a statement of intended result is not a claim limitation); *Syntex (U.S.A.) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1378, 74 USPQ.2d 1823, 1828 (Fed. Cir. 2005) (the term “in a stabilizing amount” simply describes the intended result of using the weight to volume ratios recited in the claims). As the court stated in *Bristol-Myers Squibb*, in holding that the terms “for reducing hematologic toxicity” and “an antineoplastically effective amount” were not claim limitations,

The express dosage amounts are material claim limitations; the statement of the intended result of administering those amounts does not change those amounts or otherwise limit the claim.

246 F.3d at 1375, 58 USPQ.2d at 1513.

Regardless, whatever is true of the claimed invention with respect to the placement of weighting means is also inherently true of the prior art. In other words, to the extent that placing weighting means at the claimed location(s) results in certain ball flight characteristics, the prior art inherently anticipates to the extent it teaches placement of weighting means at the same location(s), even if the prior art does not explicitly recognize or explain the resulting ball flight characteristics. As the Federal Circuit stated in *Atlas Powder Co. v. Ireco, Inc.*, 190 F.3d 1342, 1348-49, 51 USPQ.2d 1943, 1947 (Fed. Cir. 1999):

Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates. Inherency is not necessarily coterminous with the knowledge of those of ordinary skill in the art. Artisans of ordinary skill may not recognize the inherent characteristics or functioning of the prior art. *However, the discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer.*

(Citations omitted; emphasis added).

9. “Weighting means not contiguous with any inner surface of said void space”

Dependent claim 9, which depends from claim 1, recites the additional limitation that “at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.” (’660 patent, col. 8, lines 47-49.)

The “void space” is behind the face plate and above the sole portion, so it is clear that the inner surfaces of the void space include the inner surfaces of the face plate and the sole portion. At the same time, the claims do not preclude the club head from having sides, a rear and/or a crown portion (*e.g.*, a closed shell). To the extent that the club head has these other portions, the inner surfaces of the void space also include their inner surfaces. This follows from the ordinary meaning of “void space” – a limited volume that is vacant, not occupied, or contains nothing – since the void space by definition would be bounded by the inner surfaces of those

other portions of the club head. That is, since the void space would terminate at the sides, rear and crown portion, the inner surfaces of the void space would include the inner surfaces of the sides, rear and crown portion just as much as they include the inner surfaces of the face plate and the sole portion. Thus, “any inner surface of said void space” means any inner surface of the structures that bound the void space, including but not limited to any inner surface of the face plate and the sole portion.

As discussed in section III.B.7., the ordinary meaning of the term “contiguous” requires actual contact. Neither the specification nor the prosecution history of the '660 patent sheds any light on how claim 9's requirement of a “weighting means not contiguous with any inner surface of said void space” applies to any of the disclosed embodiments. In Figs. 14-17, it is unclear if weights E-I are contiguous with one or more inner surfaces of the void space, or instead are spaced (if only slightly) from the inner surface by some supporting structure that is not shown or described. The specification suggests that players can move weights E, F, G and H (*e.g.*, '660 patent, col. 6, lines 5-9, 19-21 & 31-36), but does not disclose how the weights are mounted or what allows players to move them. By adding new subject matter in a continuation-in-part application, serial No. 11/588,992, which issued as the '667 patent, the applicant showed how weight F in Figs. 14-14B could be mounted to allow movement by players, including a support structure in the form of a threaded bolt 121 that spaces weight F from the inner surfaces of the void space in Figs. 14A & 14B. (*See* '667 patent, col. 6, line 59 – col. 7, line 21; Figs. 14, 14A & 14B.) Although threaded bolt 121 clearly has weight and is moved along tracks 118, 119, 119A and 119B together with weight F (*see* Figs. 14A & 14B), the applicant apparently has chosen not to define or include the threaded bolt as part of weight F.

Additionally, Figs. 18-20 of the '660 patent disclose clip-on type weighting elements J-L that appear to clip onto the rear or top of the club head. (*See* '660 patent, col. 7, lines 11-24; Figs. 18-20.) As shown, these weighting elements apparently do not contact the inner surfaces of the void space, but they do appear to contact the edges of those inner surfaces along the rear and/or sides of the club head. Indeed, this is confirmed by Fig. 18A that was added by the applicant in the continuation-in-part application that issued as the '667 patent. It can be seen in Fig. 18A that weight J appears to touch the boundary or edges of the void space 102, but clearly does not touch the void space's inner surfaces (*i.e.*, the inner surfaces of the face plate, sole portion or sides of the club head 100).

Based on the foregoing, Requester submits that the broadest reasonable interpretation of “weighting means not contiguous with any inner surface of said void space” includes (i) a weight that is spaced from the inner surfaces of the void space by a supporting structure, which may, in fact, be a separate weight itself, and (ii) a weight that may be in contact with an edge or boundary of an inner surface of the void space, but that is not in contact with the actual inner surface itself.

Taylor Made notes that the examiner in the *inter partes* reexamination of the '660 patent applied a different construction of claim 9. In denying reexamination of claim 9 in the Order mailed September 25, 2012, the Examiner stated with regard to a prior art reference cited by Taylor Made:

If the screws contact an edge or inner surface of the void space, then they are contiguous with the void space. The term contiguous means “touching.”

(*Id.*, p. 11.) However, even under this narrower construction, Dammen satisfies the requirement of “at least one selected strategy includes weighting means not contiguous with any inner surface of said void space,” as discussed on pages 1-2 of **Appendix A**.

C. The Priority Date of the '660 Patent Claims

The application for the '660 patent was a continuation-in-part of application Ser. No. 10/383,532 (“the '532 application”), entitled “Multi-Purpose Golf Club,” filed March 10, 2003, now abandoned, which was a continuation² of application Ser. No. 09/849,522, now U.S. Patent No. 6,530,848 (“the '848 patent”), which was a utility conversion of Provisional Patent application No. 60/205/250 (“the '250 provisional application”), filed May 19, 2000. The '532 application and the '250 provisional application have virtually identical specifications to that of the '848 patent. Therefore, for convenience, Requester will simply reference the disclosure of the '848 patent in its discussion of priority.

² The face page of the '660 patent incorrectly identifies application Ser. No. 10/383,532 as a continuation-in-part of the '848 patent application. As set forth on pages 2-3 of the PRELIMINARY AMENDMENT PURSUANT TO 37 CFR 1.115 AND SUBMISSION OF UPDATED DECLARATION AND SUPPLEMENTAL ADS, dated February 1, 2005 submitted in the prosecution of the application for the '660 patent, the '532 application is a continuation of the '848 patent.

A claim of priority to an earlier application is governed by 35 U.S.C. § 120, which provides, in pertinent part, that

An application for patent for an invention *disclosed in the manner provided by the first paragraph of section 112 of this title* in an application previously filed in the United States, . . . which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.

(*Emphasis added*). As the Federal Circuit explained in *In re Chu*,

a patent application is entitled to the benefit of the filing date of an earlier filed application [under 35 U.S.C. § 120] *only if* the disclosure of the earlier application provides support for the claims of the later application, as required by 35 U.S.C. § 112.

66 F.3d 292, 297, 36 USPQ.2d 1089, 1093 (Fed. Cir. 1995) (*emphasis added*). *See also Mendenhall v. Cedarrapids Inc.*, 5 F.3d 1557, 1566, 28 USPQ.2d 1081, 1089-90 (Fed. Cir. 1993) (“A patentee cannot obtain the benefit of the filing date of an earlier application where the claims in issue could not have been made in the earlier application.”).

Typically, a continuation-in-part application contains subject matter from a prior application and additional matter not disclosed in the prior application. *Waldemar Link, GmbH & Co. v. Osteonics Corp.*, 32 F.3d 556, 558, 31 USPQ.2d 1855, 1857 (Fed. Cir. 1994). A continuation-in-part application is *not* entitled to the priority date of an earlier patent application simply because the continuation-in-part application makes reference to and attempts to claim priority to the earlier patent application and the priority claim is printed on the face of the patent. Subject matter that arises for the first time in the continuation-in-part application does not receive the benefit of the filing date of the prior application. *Id.* Rather, “[c]laims containing any matter introduced in the [continuation-in-part] are accorded the filing date of the [continuation-in-part] application. However, matter disclosed in the parent application is entitled to the benefit of the filing date of the parent application.” *Id.*

Accordingly, the decision on the proper priority date for subject matter claimed in the CIP application depends on when the subject matter first appeared in the patent disclosures. *Augustine Medical, Inc. v. Gaymar Industries*, 181 F.3d 1291, 1302, 50 USPQ.2d 1900, 1909 (Fed. Cir. 1999). “To decide this question, a court must examine whether the ‘disclosure of the application relied upon reasonably convey[s] to the artisan that the inventor had possession at that time of the later claimed subject matter.’”

None of the claims of the '660 patent for which reexamination is requested are supported by the disclosure of the '848 patent. Therefore, none of the claims are entitled to the benefit of an earlier priority date under section 120.

Independent claim 1 requires the step of “(c) selectably employing two of the following club weighting strategies to said club ... , the strategies comprising”: “(i) providing within said void space weighting means between a low Y, low Z coordinate ... to a high Y, high Z coordinate”; “(ii) providing within said void space weighting mean between a high Y, high Z coordinate ... to a low Y, low Z coordinate”; “(iii) modifying weighting means substantially within said void space between a low Z-coordinate ... to a high Z-coordinate”; and “(iv) providing weighting means substantially within said void space at a low X-coordinate ... to a high X-coordinate.” Claim 9 depends from claim 1 and thus contains these same limitations.

Claim 1 recites *a range of coordinates* for the weighting means. The ranges on all three axes – X, Y and Z – are low to high in a 3x3x3 matrix. The '848 patent does not provide support for claim 1 of the '660 patent for at least the reason that the '848 patent does not disclose weights over the entirety, or at both extremes, of the claimed range of coordinates on each axis. *See Pordy v. Land O'Lakes, Inc.*, 97 Fed. Appx. 921, 929 (Fed. Cir. 2004) (holding that the claims of a CIP patent were not entitled to the earlier filing date of the original parent application because the parent application failed to teach or suggest the entirety of the ranges claimed in the CIP patent).

The disclosure of the '848 patent makes clear that it is *solely* concerned with modifying the weight of a golf club head *by modification of its sole plate*. As stated in the Summary of the Invention of the '848 patent:

A golf club head made of wooden, plastic, metal, and other suitable materials is modified to decrease its weight by hollowing

out the club head *and providing replaceable, weighted sole plate(s)*. The *sole plate* may be uniformly or variably weighted from club hosel end to toe end, and may include a weight of uniform or non-uniform weight distribution, which is mounted or made a part of the interior of the sole plate, and the weight is placed up against the interior of the club face.

Accordingly, it is a principal object of the invention to provide a wooden, plastic or metal golf club having a weight modified club head, provided by *an interchangeable sole plate*.

....

It is a further object of the invention to provide a golf club having a club head with a hollowed portion made during production according to the golfer's preference, and further providing *a modified sole plate*, with or without and additional, integral or added weight, fitted in behind the face plate of the club.

('848 patent, col. 2, lines 38-60.)

Although the '848 patent lacks any disclosure of a coordinate system applied to the club head, Requester recognizes that a virtual X, Y, Z orthonormal coordinate system as defined in the claims could be applied to it. Regardless, consistent with the Summary of the Invention, in all of the embodiments in the '848 patent a weight is *only* added to the golf club head via a modified sole plate. (See '848 patent, col. 2, lines 38-60; Fig. 4.) Thus, the location of the weight is limited to a low Z (Z1) coordinate. As described in the Summary of the Invention, the '848 discloses various embodiments for weighting the sole plate, including weighting the sole plate from the club's hosel end (X1) to the toe end (X3). The '848 patent also describes weighting the sole plate against the interior of the face of the club head, so it discloses providing weight at least at a low Y (Y1) coordinate (*id.*, col. 2, lines 41-47), if not over the entire range low Y to high Y. What the '848 patent most clearly and indisputably fails to disclose is providing weights anywhere in an X-Y plane (a) over the entirety of the Z axis, from a low Z to high Z coordinate, as recited in steps (c)(i)-(iii) of claim 1.

The insufficiency of the disclosure of the '848 patent specification to support the '660 patent claims stands in stark contrast to the disclosure of the '660 patent itself. The embodiments depicted in Figs. 2-20 of the '660 patent provide clear support for the requirement of providing weighting means over the entire range of coordinates of the club head, low to high, along all three axes, X, Y and Z. For example, Fig. 7 shows weight B at an X2, Y1, Z1

coordinate, Fig. 16 shows weight H at a Y2, Z2 coordinate, Fig. 12 shows a weight at an X3, Y3, Z3 coordinate, and Fig. 11 shows a weight at a X1 Y3, Z2 coordinate. *None* of the disclosure of the '660 patent that supports its claims is found in the '848 patent.

Therefore, independent claim, and dependent claim 9, manifestly are *not* entitled to the benefit of the filing date of the '848 patent. *Waldemar Link*, 32 F.3d at 558, 31 USPQ.2d at 1857. These claims are only entitled to the filing date of the '660 patent—April 3, 2004.

D. Prior Art - Dammen

As discussed below and in more detail in section IV, including **Appendix A** thereto, claims 1 and 9 of the '660 patent are invalid because they are anticipated by Dammen.

Dammen published on September 13, 2001, more than one year before the priority date of the '660 patent. Therefore, Dammen qualifies as prior art under 35 U.S.C. § 102(b).

Dammen discloses a golf club head having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See, e.g., Dammen, 2:16-25.) The golf club head in Dammen has an internal cavity or "void space" behind the front face 3 ("face plate") and above a bottom face 2 ("sole portion"). (Dammen, 4:10-11; Figs. 1-5.) The void space is substantially conformal in geometry and volume to the club head. (See Figs. 1-5.)

Dammen's club head includes one or more tubular sleeves 1 within the void space. (Dammen, 4:11-13.) "The tubular sleeve or sleeves are positioned in a manner such that the opening of the tubular sleeve is located at the rear part of the bottom face of the club head and are positioned at an angle up towards the centre 4 of the striking surface (front face)." (*Id.*, 4:14-17.) The tubular sleeves are internally threaded for receiving a complementary shaped screw or weight 7. (Dammen, 4:18-21.) "The length of the screw weight 7 is shorter than the length of the tubular sleeve, so as to allow it to be screwed back and forth in the tubular sleeve as desired." (*Id.*, 4:21-23.) Additionally, the screws weights 7 may be placed at any position between the ends of the two tubular sleeves 1. (*Id.*, 4:24-25.)

In the embodiment depicted in Figs. 1-4 of Dammen, the club head has two tubular sleeves 1 positioned approximately symmetrically about the center line of the striking surface 3, with one associated movable screw weight 7 within each sleeve. As shown in Fig. 2, the screw weights 7 may be located at approximately the same position at the bottom of each of the tubular sleeves 1, *i.e.*, as close possible to the striking face 3. Alternatively, the screw weights 7 may be located at approximately the same position at the top of each of the tubular sleeves, *i.e.*, at the furthest possible distance from and below the striking surface 3. (Dammen, Fig. 3.) Or, as shown in Fig. 4, the screw weights 7 may be positioned opposite of each other, *i.e.*, one screw near the striking surface 3 and the other screw 7 furthest away from the striking surface 3.

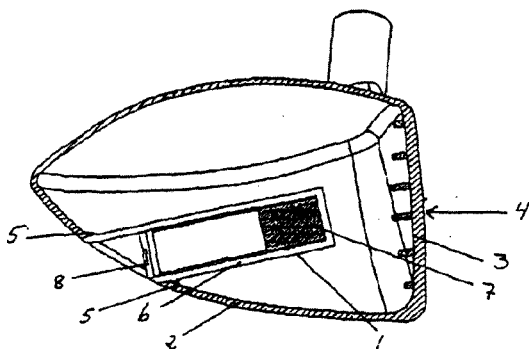


Fig. 1

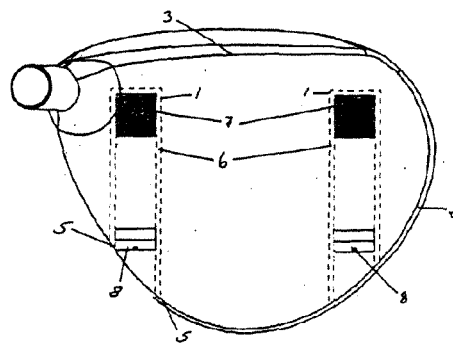


Fig. 2

A virtual X, Y, Z orthonormal coordinate system as defined in claim 1 of the '660 patent can be applied to the drawing figures of the embodiments in Dammen. One possible application to Dammen, using the examples in the '660 patent (Figs. 2 & 6-12) as a guide, is shown in **Exhibit A-1**, which is annexed to **Appendix A** attached hereto. A summary of the X, Y and Z coordinate positions of Dammen's weights is set forth in **Exhibit A-2** annexed to **Appendix A**.

Requester notes that in the pending *inter partes* reexamination of the '667 patent, the Patent Owner submitted a RESPONSE UNDER 37 C.F.R. 1.530 TO OFFICIAL ACTION³ dated October 10, 2012, arguing that Dammen fails to disclose a "void space" and "x-axis variability."

³ The Patent Owner incorrectly cited to 37 C.F.R. § 1.530, which relates to responses to office actions in *ex parte* reexaminations. Responses in *inter partes* reexaminations are governed by 37 C.F.R. § 1.945.

In response, Requester explained that Dammen does in fact disclose a golf head club having a void space and satisfies the requirements of providing a weighting element “at a lower X-coordinate...to a higher X-coordinate,” as recited in claims 1 and 8 of the '667 patent. (See THIRD PARTY REQUESTOR’S COMMENTS AFTER PATENT OWNER’S RESPONSE UNDER 37 C.F.R. 1.530 TO OFFICIAL ACTION dated November 9, 2012, pp. 2-3 & 5-7.) Requester also submitted a declaration of Todd Beach in support of those arguments.

Because claim 1 of the '660 patent, from which claim 9 depends, also recites a “void space” and providing a weighting means “at a low X-coordinate...to a high X-coordinate,” Requester anticipates that the Patent Owner will make similar arguments in this proceeding. Therefore, Requester submits a DECLARATION OF TODD BEACH (attached hereto as **Appendix B**) to address those anticipated arguments. Specifically, as detailed in **Appendix A** and in the Beach declaration, Dammen discloses a golf club head having “a void space behind a face plate of said club and above a sole portion thereof” and satisfies the requirement of providing weighting means “at a low X-coordinate...to a high X-coordinate.”

Dammen was not disclosed, cited or applied during prosecution of the '660 patent, and therefore was not considered by the Examiner during prosecution of the '660 patent application, either alone or in combination with any other references.

IV. Detailed Explanation Under 37 C.F.R. § 1.510(b)

Pursuant to 37 C.F.R. § 1.510(b), a detailed explanation of the pertinency and manner of applying the cited prior art to every claim for which reexamination is requested is set forth as follows⁴:

The claim chart attached hereto as **Appendix A** shows that claims 1 and 9 of the

⁴ As presently advised, Requester believes that the claims of the '660 patent are invalid on other grounds, including failure to comply with 35 U.S.C. § 112. Requester understands, however, that compliance with 35 U.S.C. § 112 will neither be considered nor resolved in reexamination (except respecting subject matter added or deleted in the reexamination proceeding). Accordingly, this reexamination request is without prejudice to any other defenses that Requester might assert against the '660 patent in other proceedings, including lack of compliance with 35 U.S.C. § 112.

'660 patent are unpatentable under 35 U.S.C. § 102(b) as anticipated by Dammen.

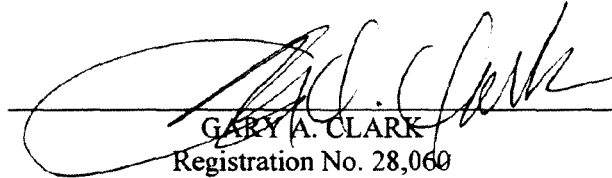
In accordance with PTO practice, this request for reexamination is based on the broadest reasonable interpretation of the claims and is without prejudice to any claim interpretation that Requester might urge or advance in litigation involving the '660 patent.

V. **Conclusion**

For the reasons given above, Requester respectfully requests that the Patent and Trademark Office enter an order for *ex parte* reexamination of claims 1 and 9 of U.S. Patent No. 7,128,660.

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

By


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APPENDIX A**INVALIDITY CLAIM CHART FOR U.S. PATENT NO. 7,128,660****Section 102(b) over PCT Publication No. WO 01/66199 to Dammen**

CLAIM	§ 102(b) INVALIDITY ARGUMENTS
1. A method of enhancing performance of a golf club, the method comprising the steps of:	<p>Claim 1 is unpatentable under § 102(b) as anticipated by U.S. Patent No. PCT Publication No. WO 01/66199 to Dammen ("<u>Dammen</u>").</p> <p><u>Dammen</u> discloses a golf club head having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See, e.g., <u>Dammen</u>, 2:16-25.)</p>
(a) providing a void space behind a face plate of said club and above a sole portion thereof;	<p><u>Dammen</u> teaches a golf club that is preferably "made of metal, such as a driver or a wood." (<u>Dammen</u>, 1:3-4.) At the time of <u>Dammen</u>'s priority date (March 2000), persons skilled in the art understood that metal golf club heads such as drivers and woods (also known as "metalwoods") were made of thin, metal shells with hollow interiors. (Declaration of Todd Beach, "Beach Decl.," ¶ 9.) This was due in large part to the fact that the volume of the club heads and the density of metals used, including stainless steel, titanium, and aluminum, would have made solid golf club heads, or club heads consisting of shells filled with other material, too heavy for any practical use. (<i>Id.</i>)</p> <p>Additionally, Fig. 1 of <u>Dammen</u>, indicates that the golf club head is hollow. The cross-hatching around the periphery of the club head indicates to persons skilled in the art that the golf club head consists of a thin shell, and the lack of cross-hatching on the interior of the shell indicates that it is hollow, <i>i.e.</i>, it has an empty void space (except for the tubular sleeve(s) 1). (Beach Decl., ¶ 10.)</p> <p>Further, <u>Dammen</u> teaches that the tubular sleeves 1 are "attached to the bottom face 2 by means of appropriate fixing means, such as welding, gluing or integrally cast with the club head." (<u>Dammen</u>, 4:12-14.) Persons skilled in the art would understand that based on this disclosure of the attachment points (presumably at locations 5 in Fig. 1), <u>Dammen</u>'s club</p>

CLAIM	§ 102(b) INVALIDITY ARGUMENTS
	<p>head consists of a thin shell. (Beach Decl., ¶ 11.) Otherwise, the tubular sleeves presumably would be “attached” along the entire length of the tubular sleeves 1. (<i>Id.</i>)</p> <p>Accordingly, the golf club head in <u>Dammen</u> has an internal cavity or “void space” behind the front face 3 (“face plate”) and above a bottom face 2 (“sole portion”). (<u>Dammen</u>, 4:10-11; Figs. 1-5; Beach Decl., ¶ 12.)</p>
<p>(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion;</p>	<p>A virtual X, Y, Z orthonormal coordinate system as defined in this claim can be applied to the golf club in <u>Dammen</u>. One possible application to <u>Dammen</u>, using the examples in the '660 patent (Figs. 2 & 6-12) as a guide, is shown in Exhibit A-1 attached hereto.</p>
<p>(c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy,</p>	<p><u>Dammen</u>'s club head includes one or more tubular sleeves 1 within the void space. (<u>Dammen</u>, 4:11-13.) “The tubular sleeve or sleeves are positioned in a manner such that the opening of the tubular sleeve is located at the rear part of the bottom face of the club head and are positioned at an angle up towards the centre 4 of the striking surface (front face).” (<i>Id.</i>, 4:14-17.)</p> <p>The tubular sleeves are internally threaded for receiving a complementary shaped screw weight 7. (<u>Dammen</u>, 4:18-21.) “The length of the screw 7 is shorter than the length of the tubular sleeve, so as to allow it to be screwed back and forth in the tubular sleeve as desired.” (<i>Id.</i>, 4:21-23.) Additionally, the screw weights 7 may be placed at any position between the ends of the two tubular sleeves 1. (<i>Id.</i>, 4:24-25.)</p>

CLAIM	§ 102(b) INVALIDITY ARGUMENTS
	<p>In the embodiment depicted in Figs. 1-4 of <u>Dammen</u>, the club head has two tubular sleeves 1 positioned approximately symmetrically about the centre line of the striking surface 3, with one associated movable screw weight 7 within each sleeve. As shown in Fig. 2, the screw weights 7 may be located at approximately the same position at the bottom of each of the tubular sleeves 1, <i>i.e.</i>, as close possible to the striking face 3. Alternatively, the screw weights 7 may be located at approximately the same position at the top of each of the tubular sleeves, <i>i.e.</i>, at the furthest possible distance from and below the striking surface 3. (<u>Dammen</u>, Fig. 3.) Or, as shown in Fig. 4, the screw weights 7 may be positioned opposite of each other, <i>i.e.</i>, one screw weight 7 near the striking surface 3 and the other screw weight 7 furthest away from the striking surface 3.</p> <p>The tubular sleeve 1 on the heel side of the club head (and all weights added to this tubular sleeve) has a low X (X1) coordinate, while the tubular sleeve on the toe side has a high X (X3) coordinate. Weights 7 in either of the tubular sleeves are capable of having a Y coordinate of low to medium Y (Y1-Y2), medium Y (Y2), and medium to high Y (Y2-Y3) and a low to medium Z coordinate (Z1-Z2). For convenience, the possible X, Y and Z coordinates of the screw weights 7 in the tubular sleeves 1 are set forth in table form in Exhibit A-2 attached hereto.</p> <p><u>Dammen</u>'s weights 7 are spaced from and are not contiguous with any part of the striking surface ("face plate"). (See <u>Dammen</u>, Figs. 1-5.)</p> <p>The ways in which <u>Dammen</u> may carry out each specific weighting strategy are discussed in more detail below under steps (c)(i)-(iv).</p> <p><u>Dammen</u> discloses that the weights in the Figure 4 embodiment are located at different positions with respect to the front and back of the golf club head, <i>i.e.</i>, having different Y-coordinates. Specifically, <u>Dammen</u> recites: "In Figure 4, the screws are positioned opposite each other, <i>i.e.</i> one screw 7 near the striking surface 3 and the other screw 7 furthest away from the striking surface." (<u>Dammen</u>, 5:22-23.) As shown in Figure 4, the weight 7 on the heel</p>

CLAIM	§ 102(b) INVALIDITY ARGUMENTS
	<p>side has a Y2 coordinate, while weight 7 on the toe side has a Y1-Y2 coordinate. (Request, pp. 115 & 117.) Furthermore, the weights in either of the tubular sleeves are capable of having a Y coordinate of Y1-Y2, Y2, or Y2-Y3. (Request, p. 117.)</p> <p>Accordingly, <u>Dammen</u> discloses various combinations of two weighting strategies with different selected values of Y that satisfy step (c). For example, step (c)(i) is satisfied with a screw weight in tubular sleeve 1 on the heel side having a medium to high Y (Y2-Y3) coordinate which can be combined with step (c)(ii) with a screw weight in tubular sleeve 1 on the toe side having a low to medium Y (Y1-Y2) coordinate to satisfy limitation (c) because a selected value of Y for step (c)(i) (Y2-Y3) does not equal a selected value of Y for step (c)(ii) (Y1-Y2).</p>
the strategies comprising:	
<p>(i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin;</p>	<p>As shown in Exhibit D-1, Figs. 1-2 of <u>Dammen</u> discloses a screw weight 7 in tubular sleeve 1 (heel or toe side) having a low to medium Y (Y1-Y2) coordinate and a low to medium Z (Z1-Z2) coordinate.</p> <p>Alternatively, Fig. 2 of <u>Dammen</u> discloses a screw weight 7 in tubular sleeve 1 (heel or toe side) having a medium Y (Y2) coordinate and a low to medium Z (Z1-Z2) coordinate (see Fig. 1). <u>Dammen</u> further teaches that screw weights 7 may be placed at any position between the two ends of the tubular sleeves 1. (<u>Dammen</u>, 4:24-25.) Therefore, a screw weight 7 positioned at the center of tubular sleeve 1 (heel or toe side) will have a medium Y (Y2) and low to medium Z (Z1-Z2) coordinate.</p> <p>Fig. 5 of <u>Dammen</u> also shows a screw weight 7 in tubular sleeve 1 having a low to medium Y (Y1-Y2) coordinate with the capability of placing the screw weight at any position up to a high Y (Y3) coordinate.</p> <p>Screw weights 7 are positioned within the tubular sleeves 1, which are within the hollow cavity of the club head. (Id., Figs. 1-5.) Therefore, the screw weights are “within the void space.”</p> <p>Accordingly, a screw weight positioned at the</p>

CLAIM	§ 102(b) INVALIDITY ARGUMENTS
	<p>farthest end (i.e., closest to the striking face) or in the middle of either of the tubular sleeves of <u>Dammen</u> satisfies step (c)(i).</p>
<p>(ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;</p>	<p>Step (c)(ii) is merely the inverse of step (c)(i) in all material respects, given that the specified ball flight characteristics are not claim limitations. <i>See</i> Request, pp. 14-15. Thus, <u>Dammen</u> satisfies the weighting strategy of step (c)(ii) for the reasons discussed for step (c)(i) above, which are incorporated by reference.</p>
<p>(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or</p>	<p>As shown in Fig. 1 of <u>Dammen</u>, screw weight 7 in tubular sleeve 1 has a low to medium Z (Z1-Z2 coordinate).</p> <p>Alternatively, a screw weight 7 positioned at or near the opening of the tubular sleeve 1, i.e., nearest the rear of the club head, will have a low to medium Z (Z1-Z2) coordinate.</p> <p>Each of screw weights 7 in <u>Dammen</u>'s tubular sleeves are "within said void space" for the reasons discussed for step (c)(i) above, which are incorporated by reference.</p> <p>Accordingly, a screw weight positioned at the farthest end of the tubular sleeves or near the opening of the tubular sleeves in <u>Dammen</u> will satisfy step (c)(iii).</p>
<p>(iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice, thereby enhancing performance of said club.</p>	<p>As shown in Figs. 2-4 of <u>Dammen</u>, a screw weight 7 positioned in tubular sleeve 1 near the heel side of the club head will have a low X (X1) coordinate, while a screw weight 7 positioned in tubular sleeve 1 near the toe side will have a high X (X3) coordinate.</p> <p><u>Dammen</u> teaches a golf club head embodiment with two weighting elements located at different coordinates along the X-axis (<i>see</i> Fig. 4), and <u>Dammen</u> explicitly states that this weight arrangement makes it possible to prevent slicing. (<i>See</i> Beach Decl., ¶ 14.) Specifically, <u>Dammen</u> discloses that</p> <p>In Figure 4, the screws 7 are positioned opposite each other, i.e. one screw 7 near the striking surface 3 and the other screw 7 furthest away from the striking</p>

CLAIM	§ 102(b) INVALIDITY ARGUMENTS
	<p>surface 3. In this situation, the balancing point of the club head is displaced, thus making it possible to prevent the occurrence of 'slicing', i.e. when the ball gains a screw and goes of [sic, off] the course.</p> <p>(<u>Dammen</u>, 5:23-26.)</p> <p>In Figure 4 of <u>Dammen</u>, the weight 7 in the tubular sleeve on the heel side of the club head has a low X (X1 coordinate), while the weight 7 in the tubular sleeve on the toe side has a high X (X3 coordinate). (Beach Decl., ¶ 15.) The positioning of the weights as shown in Figure 4 causes an increase in the center of gravity ("CG") about the Y axis, a decrease in the CG about the Z axis, and a change in the moment of inertia about the shaft axis. (<i>Id.</i>) This causes the club head to have more dynamic loft, which makes it easier to turn the ball over and prevent slicing. (<i>Id.</i>) Although <u>Dammen</u> may not teach moving the CG along the X-axis, a change in the CG about the X-axis is not required to adjust or compensate for hook or slice. (<i>Id.</i>) Even more, such a change in the CG is nowhere required by the <i>claims</i> of the '660 patent.</p> <p>Each of screw weights 7 in <u>Dammen</u>'s tubular sleeves are "within said void space" for the reasons discussed for step (c)(i) above, which are incorporated by reference.</p> <p>Accordingly, a screw weight located at any position within either of the tubular sleeves of <u>Dammen</u> satisfies step (c)(iv).</p>
<p>9. The method of enhancing performance of a golf club as recited in claim 1, in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.</p>	<p>Claim 9 is unpatentable under § 102(b) as anticipated by <u>Dammen</u>.</p> <p><u>Dammen</u>'s weights 7 are located with tubular sleeves 1 within the void space of the golf club head. Thus, the weights 7 are not contiguous with and do not contact any portion of the any inner surface of the void space. (See <u>Dammen</u>, Figs. 1-5.)</p>

Exhibit A-1

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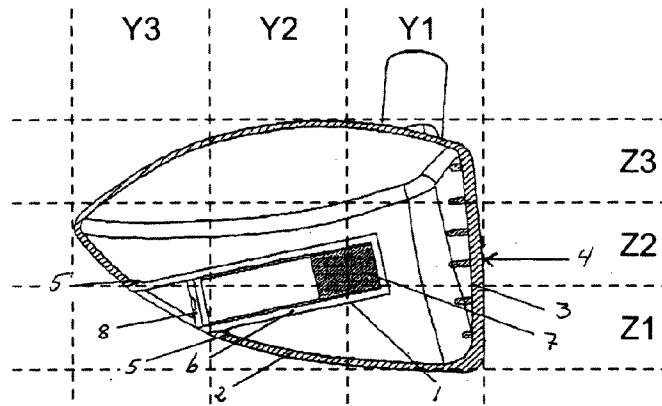


Fig. 1

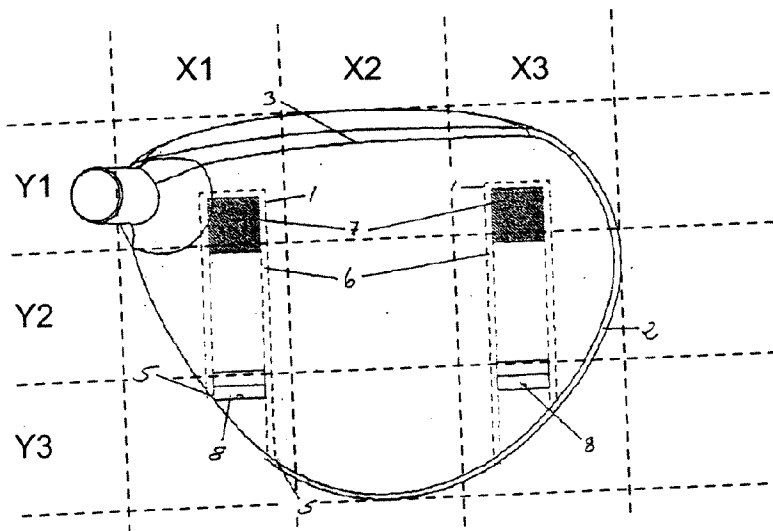


Fig. 2

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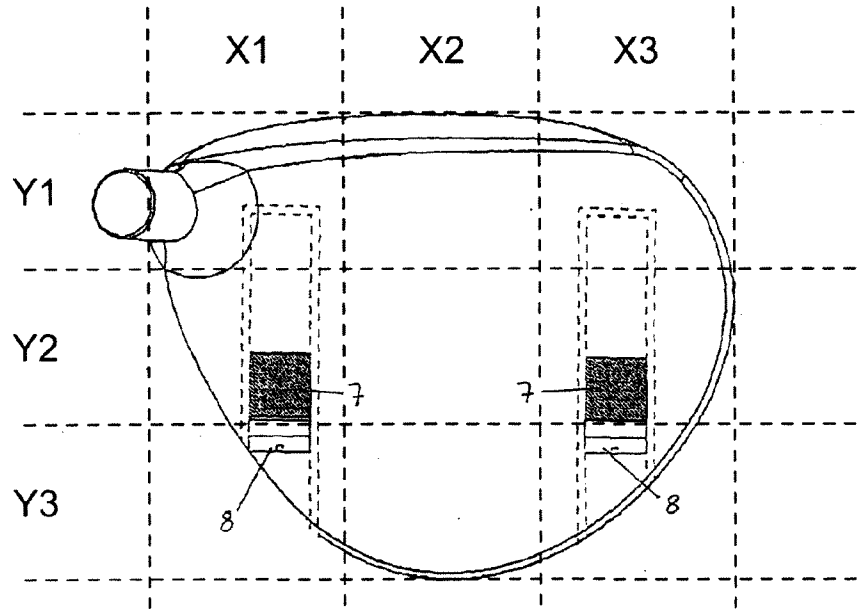


Fig. 3

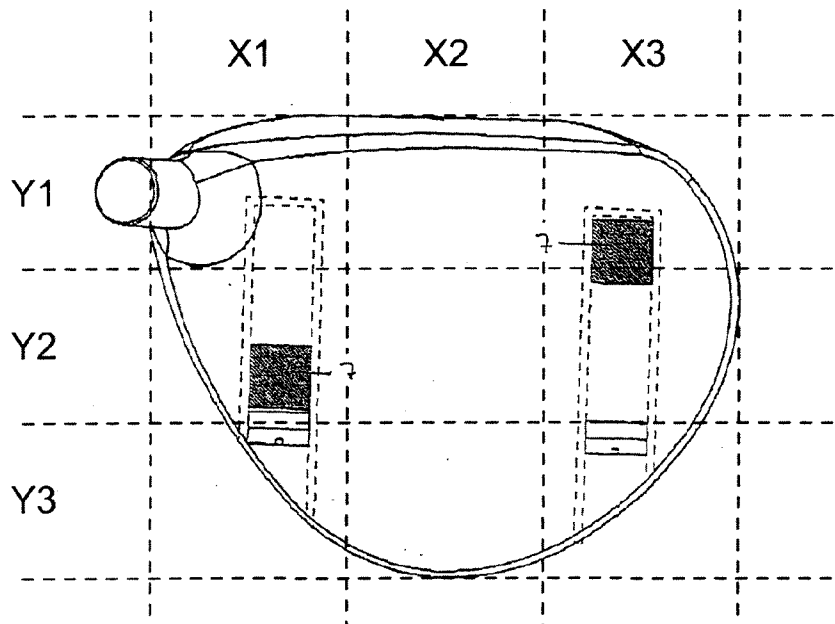


Fig. 4

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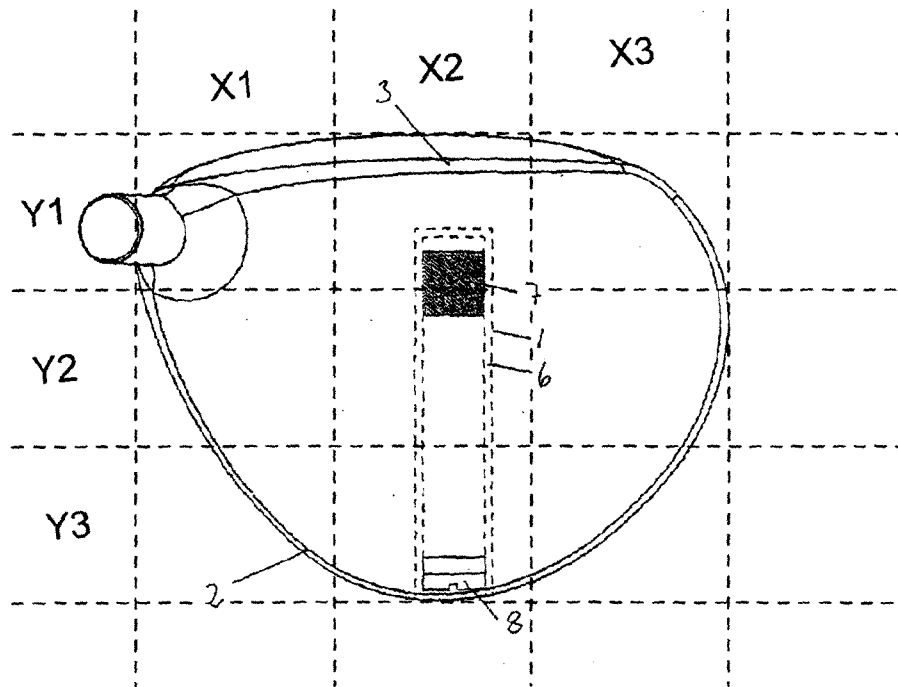


Fig. 5

Exhibit A-2**Dammen – Weight Locations**

Tubular Sleeve	X Coordinate	Y Coordinate	Z Coordinate
Heel Side	X1	Y_N^*	Z1-Z2
Toe Side	X3	Y_N	Z1-Z2

* Y_N – Weights in either of the tubular sleeves are capable of having a Y coordinate of Y1-Y2, Y2, or Y2-Y3.

APPENDIX B

DECLARATION OF TODD BEACH

I, Todd Beach, hereby declare as follows:

1. I am the Vice President of Research and Development for Metalwoods at Taylor Made Golf Company, Inc. ("Taylor Made"). I make this declaration in support of REQUEST FOR EX PARTE REEXAMINATION OF U.S. PATENT NO. 7,128,660. Except as otherwise indicated, I have personal knowledge of the facts set forth herein.

Background

2. In 1983, I graduated from the University of California, San Diego with a Bachelor of Science degree in Engineering (Engineering Sciences). In 1990, I graduated from the University of California, San Diego with a Master of Science degree in Engineering Sciences (Applied Mechanics).

3. Prior to joining Taylor Made, I worked as an engineer at Sparta, Inc. in San Diego, California from 1984 to 1995.

4. In 1995, I joined Taylor Made as an engineer in the R&D department, where I was responsible for metalwood shaft development and investigation of new materials/technologies, until 1999. From 1999 to 2000, I served as the Manager of Advanced Technology, where I was responsible for developing new technologies for next generation golf clubs. From 2000 to 2002, I served as Manager of Rest-of-the-World (ROW) Golf Club Development, where I was responsible for developing metalwoods and irons designed specifically for non-US markets such as Japan, Korea and Europe. From 2002 to 2012, I served as the Director of Metalwoods Development where I was responsible for global metalwood club development. From April 2012 to present, I have served as Vice President of R&D for Metalwoods, where I am responsible for global metalwood club development and advanced designs/technologies.

5. I am a named inventor on over 90 United States patents in the golf area, nearly all of which relate to the design of golf club heads. A listing of these patents is attached as Exhibit A.

6. In my various positions at Taylor Made, I have been working with other employees in the international Taylor Made family to define consumer needs and develop a product strategy to meet those needs. I have worked with marketing departments to launch new products, evaluate the strengths and weaknesses of the marketed products, the ongoing adaptation of products, and marketing strategy to meet changing consumer needs and desires. I must anticipate future market trends, and plan, coordinate and implement research and development activities to best position Taylor Made as a leader in the industry. Throughout my career, I have acquired invaluable knowledge of managing complex international product developments, managing organizations and influencing cross-functional teams to lead in the highly competitive and volatile golf market.

7. From my many years of experience and the positions I have held, conducting research and development in the design of golf equipment and supervising others in those efforts, I am familiar with the level of ordinary skill in the art.

8. In preparation for this declaration, I have reviewed the following documents: (1) U.S. Patent No. 7,128,660 to Gillig ("the '660 patent"); and (2) PCT Publication No. WO 01/66199 to Dammen ("Dammen").

State Of The Art Of Golf Club Heads In 2000

9. Dammen teaches a golf club that is preferably "made of metal, such as a driver or a wood." (Dammen, 1:3-4.) At the time of Dammen's priority date (March 2000), persons skilled in the art understood that metal golf club heads such as drivers and woods (also known as "metalwoods") were made of thin, metal shells with hollow interiors. This was due in large part to the fact that the volume of the club heads and the density of metals used, including stainless steel, titanium, and aluminum, would have made solid golf club heads, or club heads consisting of shells filled with other material, too heavy for any practical use.

10. Additionally, Fig. 1 of Dammen indicates that the golf club head is hollow. The cross-hatching around the periphery of the club head indicates to persons skilled in the art that the golf club head consists of a thin shell, and the lack of cross-hatching on the interior of the shell indicates that it is hollow, *i.e.*, it has an empty void space (except for the tubular sleeve(s) 1).

11. I note that Dammen also teaches that the tubular sleeves 1 are “attached to the bottom face 2 by means of appropriate fixing means, such as welding, gluing or integrally cast with the club head.” (Dammen, 4:12-14.) Persons skilled in the art would understand based on this disclosure of the attachment points (presumably at locations 5 in Fig. 1) that Dammen’s club head consists of a thin shell. Otherwise, the tubular sleeves presumably would be “attached” along the entire length of the tubular sleeves 1.

12. Accordingly, persons skilled in the art would understand that Dammen teaches a golf club with a “void space.”

Weighting Element Secured Between A Lower X-Coordinate To A Higher X –Coordinate

13. Claim 1 requires two weighting elements one of which may be “secured substantially within said void space at a lower X-coordinate...to a higher X-coordinate.” In my opinion, claim 1 simply recites a weight at some coordinate along the X-axis.

14. Dammen teaches a golf club head embodiment with two weighting elements located at coordinates along the X-axis in which it is possible to adjust or compensate for hook and slice. Specifically, Dammen discloses that

In Figure 4, the screws 7 are positioned opposite each other, i.e. one screw 7 near the striking surface 3 and the other screw 7 furthest away from the striking surface 3. In this situation, the balancing point of the club head is displaced, thus making it possible to prevent the occurrence of ‘slicing’, i.e. when the ball gains a screw and goes of [sic, off] the course.

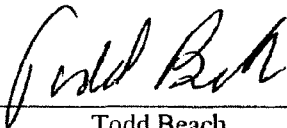
(Dammen, 5:23-26.)

15. In Figure 4 of Dammen, the weight 7 in the tubular sleeve on the heel side of the club head has a low X (X1 coordinate), while the weight 7 in the tubular sleeve on the toe side has a high X (X3 coordinate). The positioning of the weights as shown in Figure 4 causes an increase in the center of gravity about the Y axis, a decrease in the center of gravity about the Z axis, and a change in the moment of inertia about the shaft axis. This causes the club head to have more dynamic loft, which makes it easier to turn the ball over and prevent slicing.

Although Dammen may not teach moving the center of gravity along the X-axis, a change in the center of gravity about the X-axis is not required to adjust or compensate for hook or slice.

16. All statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true, and further these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 2/4/13



Todd Beach

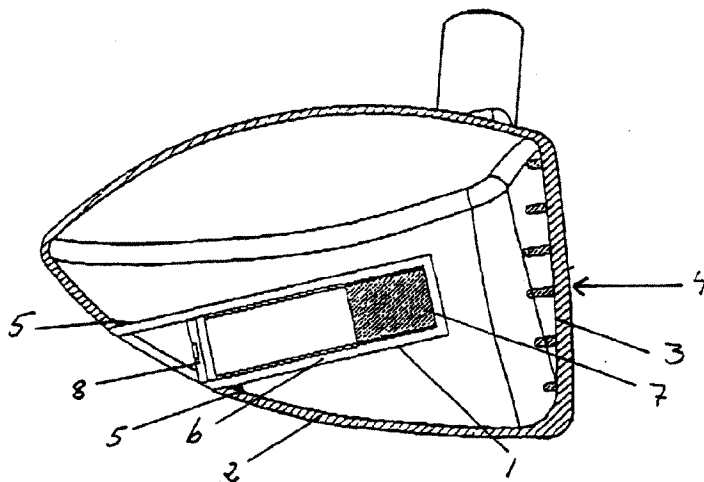
(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: **GOLF CLUB HEAD WITH ADJUSTABLE WEIGHTS**

(57) Abstract: It is described a golf club head comprising a front face (3) or striking face, a bottom face (2) and a top face, said golf club head is provided with one or more movable screws or weights (7) for adjustment of the club heads balance. The weights or screws (7) are made of a material with a relatively high specific gravity, and are provided in tube sleeves (1) inside the club head. The screw (7) can be adjusted to any desired position between the ends of the tube sleeves (1) and thereby adjust the balance point of the club head. The tube sleeves (1) are provided slanting from the front face (3) of the club head down towards the rear part of the bottom face (2) of the club head.

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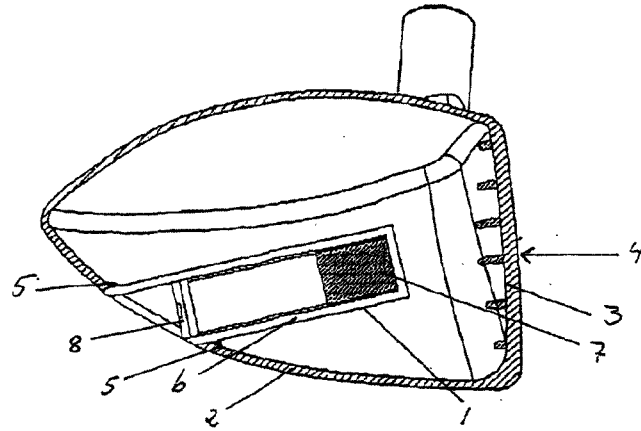


Fig. 1

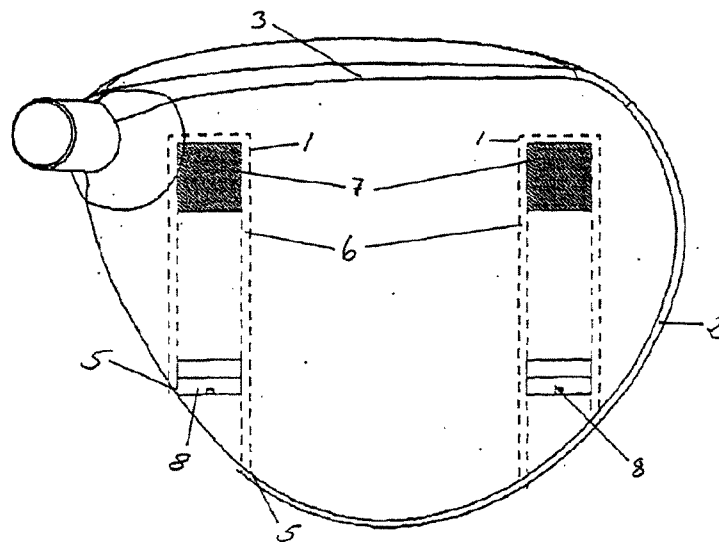


Fig. 2

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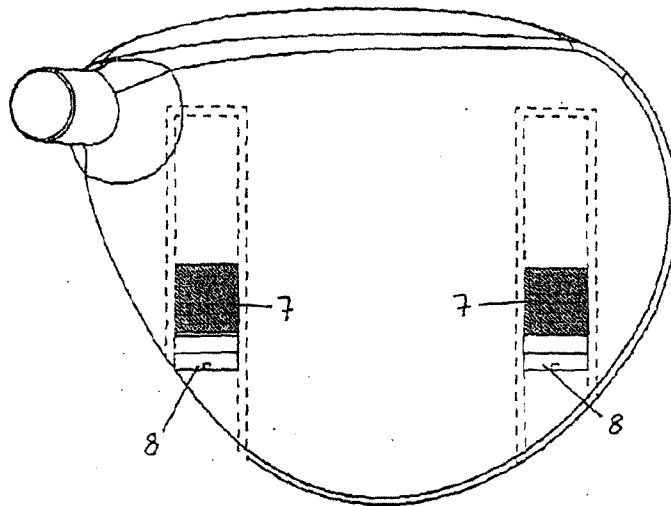


Fig. 3

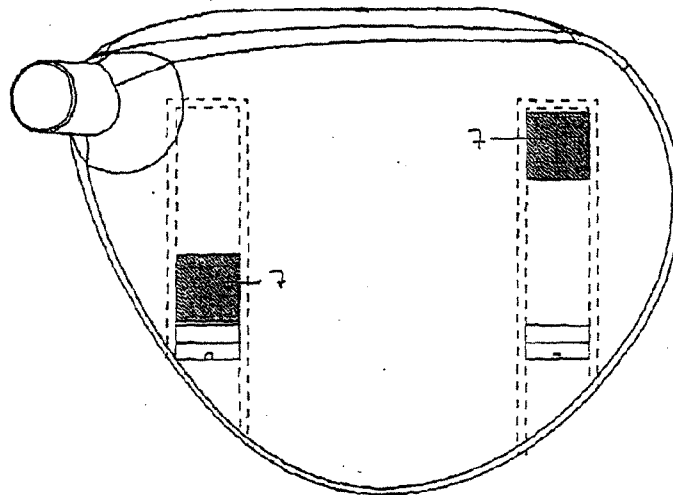


Fig. 4

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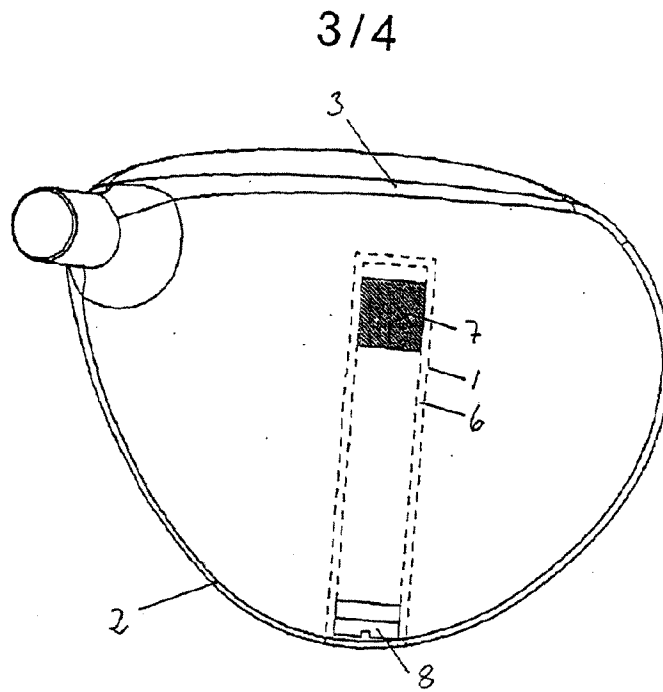


Fig. 5

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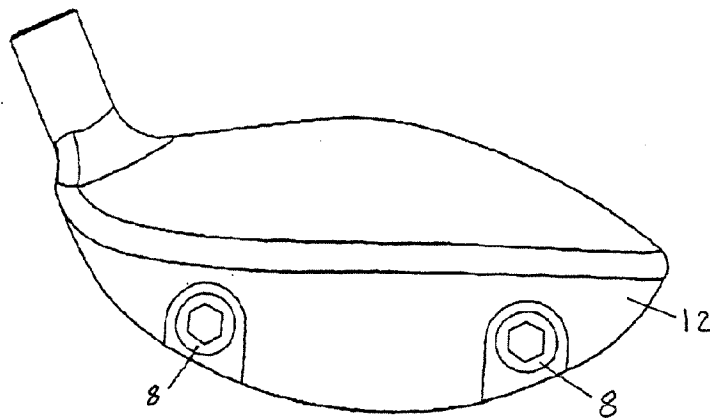


Fig. 6

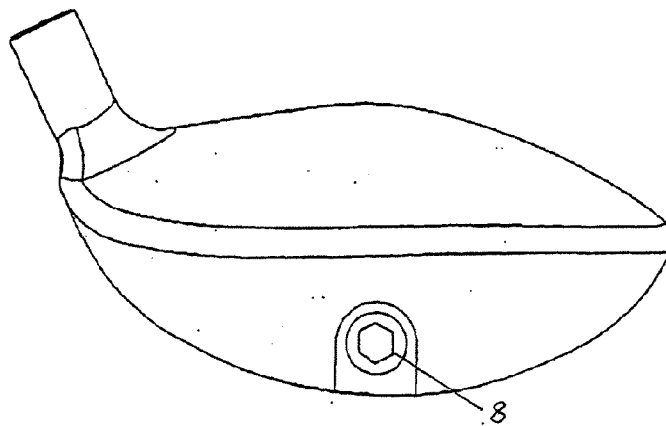


Fig. 7

INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A63B 53/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EDOC, JAPIO

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3897066 A (P.A. BELMONT), 29 July 1975 (29.07.75)	1-8
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A	GB 440379 A (G.E. BOWSER ET AL), 30 December 1935 (30.12.35)	1-8
	--	
A	US 4869507 A (D. SAHM), 26 Sept 1989 (26.09.89)	1-8
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A	DE 9012884 U1 (L.B. KAO-HSIUNG), 3 January 1991 (03.01.91)	1-8
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☐ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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Form PCT/ISA/210 (second sheet) (July 1998)

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Golf club head with adjustable weights

The present invention regards a golf club head with adjustable weights in accordance with the preamble of Claim 1, preferably a golf club head made of metal, such as a driver or a wood.

5

Dimensions, appearance and choice of materials for golf clubs are to a large extent determined by the rules of The Royal and Ancient Golf Club of St. Andrews and The United States Golf Association. The rules of these organisations have been adopted by most countries, and making changes to the golf clubs within the framework drawn up by these rules can be somewhat difficult. The above organisations have identical rules. An object of the present invention is to be able to adjust the weight distribution and thereby the balance of golf club head in such a manner that the changes lie that which is allowed according to Rule 4 and Appendix II.

15 All golf clubs have a common feature; that of having a low centre of gravity in order to give the ball an underscrew and thereby a high trajectory. At the same time, the actual striking surface must be rigid in order for the ball to go far. In order for the golf club head to be stable, it is also important that the masses on either side of the centre of the striking surface (the sweet-spot) is approximately equal. To achieve the largest possible sweet-spot, it is important to position most of the mass as far away from the centre of the striking surface as possible. The reason for this is that the golf club head becomes more stable or forgiving, because the inertia of the club about the centre of the striking surface becomes greater. Positioning the mass far down and forward, i.e. near the striking surface, would result in the club head not having sufficient stability

25

From US patent 1 133 129 there is known a golf club head made of wood or solid iron, which head has one or more threaded sleeves in which can be provided weights or leads in order to adjust the centre of gravity of the club head in a direction across the axis of the club handle. The weights or the leads can only be moved in the horizontal direction, which means that the possibilities of varying the centre of gravity of the club head are limited.

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From US patent no. 3 652 094 there is known a wooden golf club head into which has been screwed threaded sleeves. Plugs may be screwed into these sleeves in order to alter the balance and/or the swing weight of the club head.

5 From US patent no. 5 464 211 there is known a metal golf club head having a threaded sleeve in which can be placed a body for compression of the striking surface of the club head.

Further, a putter head incorporating adjustable weights is known from UK patent
10 application no. GB 2 334 454 A, and a similar putter head with an adjustable weight is known from international patent publication WO 96/32165.

An object of the present invention is to be able to adjust the centre of gravity of the club head, and thereby the trajectory of the ball.

15

Another object is to be able to adjust the centre of gravity of the club head according to the skill and playing style of the individual.

These objects and advantages are achieved by means of a metal golf club head with
20 adjustable weights, which club head includes at least a bottom face, a front face and a top face, in which club head is provided one or more tubular sleeves extending from the rear part of the club forward to the front face, in which tubular sleeves may be provided screws or weights, characterised in that the tubular sleeve or sleeves are provided at an angle from the centre line of the front face down towards the rear part of
25 the bottom face, and that one end of the tubular sleeve is open to the bottom face

The tubular sleeve or sleeves are preferably equipped with an internal thread or grooves, a complementary shaped screw or weight arranged in each tubular sleeve, which screw is selectively adjustable to any position between the ends of the tubular sleeve.

30

Preferably, the screws are manufactured from a material or a mixture of materials with a high density of mass, e.g. a metal or metal alloy, preferably tungsten.

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The opening of the tubular sleeve may in accordance with one embodiment be provided with a lid.

In accordance with a preferred embodiment, the screw has a length that essentially
5 corresponds to the length of the tubular sleeve, and the screw is preferably in the form of a cylindrically shaped, externally threaded body.

Preferably, one or more parts of the screw consist of a metal or a metal alloy, with the remaining part consisting of plastic, which parts are preferably joined by gluing.

10

The golf club head may include two tubular sleeves positioned approximately symmetrically about the centre line of the striking surface, with associated moveable screws.

15 Preferably, the tubular sleeve or sleeves are cast integrally with the rest of the club head.

In the following, the invention will be explained in greater detail by means of non-limiting examples of embodiments, with reference to the accompanying drawings, in which:

20

Figure 1 shows a sectional side view of a golf club head in accordance with the present invention;

Figure 2 shows a top section of a golf club head in accordance with figure 1, showing
25 the positioning of two tubular sleeves with screws provided at the bottom of the tubular sleeves;

Figure 3 is a sectional view of a golf club head according to Figure 2, in which the screws are arranged at the opening of the tubular sleeves;

30

Figure 4 is a sectional view of a golf club head according to Figures 2 and 3, in which the screws are arranged diagonally in relation to each other;

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Figure 5 is a sectional top view of a golf club head showing the club head with a tubular sleeve positioned at the centre of the club head and an associated screw;

Figure 6 is a perspective drawing showing the club head from the rear, with a tubular sleeve and associated screw; and

Figure 7 is a perspective drawing showing the club head from the rear, with two tubular sleeves and associated screws.

10 Figure 1 shows a sectional view of a club head termed a driver or a wood. The club head shown includes a front face 3 and a bottom face 2. In the embodiment shown, the bottom face 2 includes one or more tubular sleeves 1 attached to the bottom face 2 by means of appropriate fixing means, such as welding, gluing or integrally cast with the club head. The tubular sleeve or sleeves are positioned in a manner such that the

15 opening of the tubular sleeve is located at the rear part of the bottom face of the club head and are positioned at an angle up towards the centre 4 of the striking surface (front face). As shown in Figure 1, which shows a vertical cross section of the club head, the tubular sleeves will be approximately diagonal. The tubular sleeve is provided with an internal thread or grooves 6. A complementary shape screw or weight 7 made from a

20 material, preferably metal, with a relatively high density or mixture of several materials, such as tungsten, may be screwed into the tubular sleeve 1. The length of the screw 7 is shorter than the length of the tubular sleeve, so as to allow it to be screwed back and forth in the tubular sleeve as desired. In the state shown in Figure 1, the screw 7 is screwed in almost to the bottom of the tubular sleeve 1, however it is obvious that the

25 screw may be placed at any position between the ends of the tubular sleeve 1. A lid 8 may be fastened to the opening of the tubular sleeve 1, which prevents grass and earth from penetrating into the tubular sleeve 1. Preferably, this lid is screwed to the opening of the tubular sleeve 1. In the embodiment shown in Figure 1, the tubular sleeve is arranged at an incline from the bottom face 2 and up towards the centre line 4 of the

30 front face (striking surface) 3.

Figures 2 - 4 all show sectional views of the club head seen from above, with two tubular sleeves 1 and two associated screws or weights 7. The difference between these

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three figures is the mutual positioning of the screws 7. The purpose of being able to move the screws 7 in the tubular sleeves is to be able to achieve the desired balance of the club head. In the state shown in Figure 2, both screws 7 are positioned approximately at the bottom of the tubular sleeves 1, i.e. as close as possible to the centre line of the striking surface 3. This positioning of the screws 7 will result in the underscrew-effect being reduced or neutralised, which will give the maximum distance for the ball. At the same time, the club head will be stable, because the weights, i.e. the screws 7, are located as far to the side of the centre of the striking surface as possible.

Practical experiments have shown that it is possible to alter the striking angle or lift by $\pm 1^\circ$ by adjusting the position of the screw or screws 7 in the tubular sleeves 1. If the screws are positioned at the middle of the tubes and give a striking angle of e.g. 9° , it will be possible to change the striking angle to 8° by positioning the screw or screws at the position furthest away from the front face 3 (Fig. 3); correspondingly it will be possible to change it to 10° if the screws 7 are positioned as close to the front face 3 as possible (Fig. 2).

In the position shown in Figure 3, both screws 7 are positioned at the furthest possible distance from and below the striking surface 3. This would give the ball an underscrew and thereby a high trajectory.

In Figure 4, the screws 7 are positioned opposite each other, i.e. one screw 7 near the striking surface 3 and the other screw 7 furthest away from the striking surface 3. In this situation, the balancing point of the club head is displaced, thus making it possible to prevent the occurrence of "slicing", i.e. when the ball gains a screw and goes of the course.

Figure 5 shows a variation of the club head of Figures 2-4, incorporating only one tubular sleeve and associated screw 7. The longitudinal direction of the tubular sleeve 1 lies in the centre 4 of the striking surface 3.

In Figures 6 and 7, the club head with one and two tubular sleeves respectively is shown in perspective from the rear. In order to prevent earth and grass from penetrating into

*effect
of screw
on trajectory*

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the tubular sleeves, as well as to fulfil the previously mentioned requirements regarding no open holes in the club head, the opening of each tubular sleeve is covered by a lid 8. This lid may for instance be screwed to the end of the tubular sleeves 1 and be provided with a suitable groove or similar, so as to allow the lid to be removed by use of an
5 appropriate tool.

In accordance with a particularly preferred embodiment of the present invention, the tubular sleeve or sleeves are integrally cast with the rest of the club head. If the tubular sleeves are cast simultaneously with the club head, the tubular sleeves will form an
10 integrated part of the club head, thus avoiding tension in the material. This will in turn result in a more stable club, without any loose, screwed or welded sleeves.

In accordance with a further preferred embodiment, the screws or weights 7 have a length that essentially corresponds to the length of the tubular sleeve 1. The screws or
15 weights 7 then consist of an externally threaded, cylindrically shaped body of which part is a metal or metal alloy and the remaining part is made from a lighter material, for instance plastic. These two parts of the body are joined e.g. by gluing, so as to achieve a continuous body. An advantage of this embodiment over the embodiment shown in Figure 1 is that the open end of the tubular sleeve will not have to be shut by use of a
20 lid. One end of the cylindrical body may be made from e.g. tungsten, while the other part of the body is made from plastic. The body may then either be inserted into the tubular sleeve 1 with the metal part forward, i.e. closest to the striking surface of the club head, or with the metal part to the rear. This solution makes it possible to use one and the same cylindrical body in order to move the centre of gravity of the club head
25 both forwards and backwards. Another possibility is for the middle section to be made of metal and the two end parts of plastic.

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C l a i m s

1.

A metal golf club head with movable weights, which club head comprises at least a
5 bottom face (2), a front face (3) and a top face, in which club head is provided one or
more tubular sleeves (1) extending from the rear part of the club and forward towards
the front face, in which tubular sleeves (1) may be provided screws or weights (7),
c h a r a c t e r i s e d i n t h a t t h e t u b u l a r s l e e v e o r s l e e v e s (1) are provided at an angle
from the centre line of the front face (3) down towards the rear part of the bottom face
10 (2), and that one end of the tubular sleeve (1) opens onto the bottom face (2).

2.

A golf club head in accordance with Claim 1,
c h a r a c t e r i s e d i n t h a t t h e t u b u l a r s l e e v e o r s l e e v e s (1) are provided with
15 internal threads or grooves (6), a complementary shaped screw or weight (7) is placed in
each tubular sleeve (1), which screw (7) is selectively adjustable to any position
between the ends of the tubular sleeve (1).

3.

20 A golf club head in accordance with Claims 1-2,
c h a r a c t e r i s e d i n t h a t t h e s c r e w s (7) are made from a material or a mixture of
materials with a high density, e.g. a metal or a metal alloy, preferably tungsten.

4.

25 A golf club head in accordance with one or more of the preceding claims,
c h a r a c t e r i s e d i n t h a t t h e o p e n i n g o f t h e t u b u l a r s l e e v e (1) is provided with a
lid (8).

5.

30 A golf club head in accordance with one or more of the claims 1-3,
c h a r a c t e r i s e d i n t h a t t h e s c r e w s (7) have a length that essentially corresponds
to the length of the tubular sleeve (1), and that the screws (7) are in the form of
externally threaded, cylindrical bodies.

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6.

A golf club head in accordance with Claim 5,
characterised in that one or more parts of the screw (7) consists of a metal or a
metal alloy and the remaining part of the screw (7) consists of plastic, which parts are
5 joined, preferably by gluing.

7.

A golf club head in accordance with one or more of the preceding claims,
characterised in that the golf club head comprises two tubular sleeves (1)
10 placed approximately symmetrically about the centre line of the striking surface (3),
with associated movable screws (7).

8.

A golf club head in accordance with one or more of the preceding claims,
15 characterised in that the tubular sleeve or sleeves (1) are integrally cast with
the rest of the club head.

INTERNATIONAL SEARCH REPORT

Information on patent family members

30/04/01

International application No.

PCT/NO 01/00105

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	3897066	A	29/07/75	US 3979123 A	07/09/76
GB	440379	A	30/12/35	NONE	
US	4869507	A	26/09/89	US 4754977 A	05/07/88
DE	9012884	U1	03/01/91	NONE	

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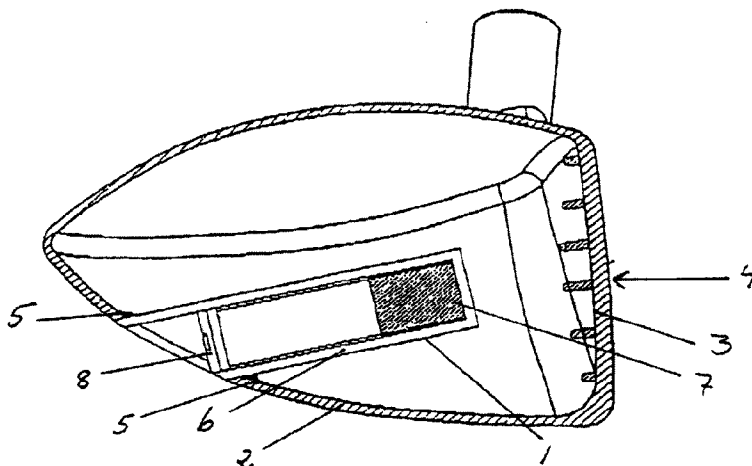
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- (71) Applicant (for all designated States except US): **PRO-GOLF DEVELOPMENT AS** [NO/NO]; Kristian Augustsgt. 13, N-0164 Oslo (NO).
- (72) Inventor; and
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- (74) Agent: **PROTECTOR INTELLECTUAL PROPERTY CONSULTANTS AS**; P.O. Box 5074 Majorstua, N-0301 Oslo (NO).
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- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:**
with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: GOLF CLUB HEAD WITH ADJUSTABLE WEIGHTS



(57) **Abstract:** It is described a golf club head comprising a front face (3) or striking face, a bottom face (2) and a top face, said golf club head is provided with one or more movable screws or weights (7) for adjustment of the club heads balance. The weights or screws (7) are made of a material with a relatively high specific gravity, and are provided in tube sleeves (1) inside the club head. The screw (7) can be adjusted to any desired position between the ends of the tube sleeves (1) and thereby adjust the balance point of the club head. The tube sleeves (1) are provided slanting from the front face (3) of the club head down towards the rear part of the bottom face (2) of the club head.

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Golf club head with adjustable weights

The present invention regards a golf club head with adjustable weights in accordance with the preamble of Claim 1, preferably a golf club head made of metal, such as a driver or a wood.

5

Dimensions, appearance and choice of materials for golf clubs are to a large extent determined by the rules of The Royal and Ancient Golf Club of St. Andrews and The United States Golf Association. The rules of these organisations have been adopted by most countries, and making changes to the golf clubs within the framework drawn up by these rules can be somewhat difficult. The above organisations have identical rules. An object of the present invention is to be able to adjust the weight distribution and thereby the balance of golf club head in such a manner that the changes lie that which is allowed according to Rule 4 and Appendix II.

15 All golf clubs have a common feature; that of having a low centre of gravity in order to give the ball an underscrew and thereby a high trajectory. At the same time, the actual striking surface must be rigid in order for the ball to go far. In order for the golf club head to be stable, it is also important that the masses on either side of the centre of the striking surface (the sweet-spot) is approximately equal. To achieve the largest possible sweet-spot, it is important to position most of the mass as far away from the centre of the striking surface as possible. The reason for this is that the golf club head becomes more stable or forgiving, because the inertia of the club about the centre of the striking surface becomes greater. Positioning the mass far down and forward, i.e. near the striking surface, would result in the club head not having sufficient stability

25

From US patent 1 133 129 there is known a golf club head made of wood or solid iron, which head has one or more threaded sleeves in which can be provided weights or leads in order to adjust the centre of gravity of the club head in a direction across the axis of the club handle. The weights or the leads can only be moved in the horizontal direction, which means that the possibilities of varying the centre of gravity of the club head are limited.

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From US patent no. 3 652 094 there is known a wooden golf club head into which has been screwed threaded sleeves. Plugs may be screwed into these sleeves in order to alter the balance and/or the swing weight of the club head.

- 5 From US patent no. 5 464 211 there is known a metal golf club head having a threaded sleeve in which can be placed a body for compression of the striking surface of the club head.

- Further, a putter head incorporating adjustable weights is known from UK patent
10 application no. GB 2 334 454 A, and a similar putter head with an adjustable weight is known from international patent publication WO 96/32165.

An object of the present invention is to be able to adjust the centre of gravity of the club head, and thereby the trajectory of the ball.

15

Another object is to be able to adjust the centre of gravity of the club head according to the skill and playing style of the individual.

- These objects and advantages are achieved by means of a metal golf club head with
20 adjustable weights, which club head includes at least a bottom face, a front face and a top face, in which club head is provided one or more tubular sleeves extending from the rear part of the club forward to the front face, in which tubular sleeves may be provided screws or weights, characterised in that the tubular sleeve or sleeves are provided at an angle from the centre line of the front face down towards the rear part of
25 the bottom face, and that one end of the tubular sleeve is open to the bottom face

The tubular sleeve or sleeves are preferably equipped with an internal thread or grooves, a complementary shaped screw or weight arranged in each tubular sleeve, which screw is selectively adjustable to any position between the ends of the tubular sleeve.

30

Preferably, the screws are manufactured from a material or a mixture of materials with a high density of mass, e.g. a metal or metal alloy, preferably tungsten.

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The opening of the tubular sleeve may in accordance with one embodiment be provided with a lid.

5 In accordance with a preferred embodiment, the screw has a length that essentially corresponds to the length of the tubular sleeve, and the screw is preferably in the form of a cylindrically shaped, externally threaded body.

Preferably, one or more parts of the screw consist of a metal or a metal alloy, with the remaining part consisting of plastic, which parts are preferably joined by gluing.

10

The golf club head may include two tubular sleeves positioned approximately symmetrically about the centre line of the striking surface, with associated moveable screws.

15 Preferably, the tubular sleeve or sleeves are cast integrally with the rest of the club head.

In the following, the invention will be explained in greater detail by means of non-limiting examples of embodiments, with reference to the accompanying drawings, in which:

20

Figure 1 shows a sectional side view of a golf club head in accordance with the present invention;

25 Figure 2 shows a top section of a golf club head in accordance with figure 1, showing the positioning of two tubular sleeves with screws provided at the bottom of the tubular sleeves;

Figure 3 is a sectional view of a golf club head according to Figure 2, in which the screws are arranged at the opening of the tubular sleeves;

30

Figure 4 is a sectional view of a golf club head according to Figures 2 and 3, in which the screws are arranged diagonally in relation to each other;

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Figure 5 is a sectional top view of a golf club head showing the club head with a tubular sleeve positioned at the centre of the club head and an associated screw;

Figure 6 is a perspective drawing showing the club head from the rear, with a tubular sleeve and associated screw; and

Figure 7 is a perspective drawing showing the club head from the rear, with two tubular sleeves and associated screws.

10 Figure 1 shows a sectional view of a club head termed a driver or a wood. The club head shown includes a front face 3 and a bottom face 2. In the embodiment shown, the bottom face 2 includes one or more tubular sleeves 1 attached to the bottom face 2 by means of appropriate fixing means, such as welding, gluing or integrally cast with the club head. The tubular sleeve or sleeves are positioned in a manner such that the

15 opening of the tubular sleeve is located at the rear part of the bottom face of the club head and are positioned at an angle up towards the centre 4 of the striking surface (front face). As shown in Figure 1, which shows a vertical cross section of the club head, the tubular sleeves will be approximately diagonal. The tubular sleeve is provided with an internal thread or grooves 6. A complementary shape screw or weight 7 made from a

20 material, preferably metal, with a relatively high density or mixture of several materials, such as tungsten, may be screwed into the tubular sleeve 1. The length of the screw 7 is shorter than the length of the tubular sleeve, so as to allow it to be screwed back and forth in the tubular sleeve as desired. In the state shown in Figure 1, the screw 7 is screwed in almost to the bottom of the tubular sleeve 1, however it is obvious that the

25 screw may be placed at any position between the ends of the tubular sleeve 1. A lid 8 may be fastened to the opening of the tubular sleeve 1, which prevents grass and earth from penetrating into the tubular sleeve 1. Preferably, this lid is screwed to the opening of the tubular sleeve 1. In the embodiment shown in Figure 1, the tubular sleeve is arranged at an incline from the bottom face 2 and up towards the centre line 4 of the

30 front face (striking surface) 3.

Figures 2 - 4 all show sectional views of the club head seen from above, with two tubular sleeves 1 and two associated screws or weights 7. The difference between these

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three figures is the mutual positioning of the screws 7. The purpose of being able to move the screws 7 in the tubular sleeves is to be able to achieve the desired balance of the club head. In the state shown in Figure 2, both screws 7 are positioned approximately at the bottom of the tubular sleeves 1, i.e. as close as possible to the centre line of the striking surface 3. This positioning of the screws 7 will result in the underscrew-effect being reduced or neutralised, which will give the maximum distance for the ball. At the same time, the club head will be stable, because the weights, i.e. the screws 7, are located as far to the side of the centre of the striking surface as possible.

Practical experiments have shown that it is possible to alter the striking angle or lift by $\pm 1^\circ$ by adjusting the position of the screw or screws 7 in the tubular sleeves 1. If the screws are positioned at the middle of the tubes and give a striking angle of e.g. 9° , it will be possible to change the striking angle to 8° by positioning the screw or screws at the position furthest away from the front face 3 (Fig. 3); correspondingly it will be possible to change it to 10° if the screws 7 are positioned as close to the front face 3 as possible (Fig. 2).

In the position shown in Figure 3, both screws 7 are positioned at the furthest possible distance from and below the striking surface 3. This would give the ball an underscrew and thereby a high trajectory.

In Figure 4, the screws 7 are positioned opposite each other, i.e. one screw 7 near the striking surface 3 and the other screw 7 furthest away from the striking surface 3. In this situation, the balancing point of the club head is displaced, thus making it possible to prevent the occurrence of "slicing", i.e. when the ball gains a screw and goes of the course.

Figure 5 shows a variation of the club head of Figures 2-4, incorporating only one tubular sleeve and associated screw 7. The longitudinal direction of the tubular sleeve 1 lies in the centre 4 of the striking surface 3.

In Figures 6 and 7, the club head with one and two tubular sleeves respectively is shown in perspective from the rear. In order to prevent earth and grass from penetrating into

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the tubular sleeves, as well as to fulfil the previously mentioned requirements regarding no open holes in the club head, the opening of each tubular sleeve is covered by a lid 8. This lid may for instance be screwed to the end of the tubular sleeves 1 and be provided with a suitable groove or similar, so as to allow the lid to be removed by use of an
5 appropriate tool.

In accordance with a particularly preferred embodiment of the present invention, the tubular sleeve or sleeves are integrally cast with the rest of the club head. If the tubular sleeves are cast simultaneously with the club head, the tubular sleeves will form an
10 integrated part of the club head, thus avoiding tension in the material. This will in turn result in a more stable club, without any loose, screwed or welded sleeves.

In accordance with a further preferred embodiment, the screws or weights 7 have a length that essentially corresponds to the length of the tubular sleeve 1. The screws or
15 weights 7 then consist of an externally threaded, cylindrically shaped body of which part is a metal or metal alloy and the remaining part is made from a lighter material, for instance plastic. These two parts of the body are joined e.g. by gluing, so as to achieve a continuous body. An advantage of this embodiment over the embodiment shown in Figure 1 is that the open end of the tubular sleeve will not have to be shut by use of a
20 lid. One end of the cylindrical body may be made from e.g. tungsten, while the other part of the body is made from plastic. The body may then either be inserted into the tubular sleeve 1 with the metal part forward, i.e. closest to the striking surface of the club head, or with the metal part to the rear. This solution makes it possible to use one and the same cylindrical body in order to move the centre of gravity of the club head
25 both forwards and backwards. Another possibility is for the middle section to be made of metal and the two end parts of plastic.

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C l a i m s

1.

A metal golf club head with movable weights, which club head comprises at least a
5 bottom face (2), a front face (3) and a top face, in which club head is provided one or
more tubular sleeves (1) extending from the rear part of the club and forward towards
the front face, in which tubular sleeves (1) may be provided screws or weights (7),
characterised in that the tubular sleeve or sleeves (1) are provided at an angle
from the centre line of the front face (3) down towards the rear part of the bottom face
10 (2), and that one end of the tubular sleeve (1) opens onto the bottom face (2).

2.

A golf club head in accordance with Claim 1,
characterised in that the tubular sleeve or sleeves (1) are provided with
15 internal threads or grooves (6), a complementary shaped screw or weight (7) is placed in
each tubular sleeve (1), which screw (7) is selectively adjustable to any position
between the ends of the tubular sleeve (1).

3.

A golf club head in accordance with Claims 1-2,
characterised in that the screws (7) are made from a material or a mixture of
20 materials with a high density, e.g. a metal or a metal alloy, preferably tungsten.

4.

A golf club head in accordance with one or more of the preceding claims,
characterised in that the opening of the tubular sleeve (1) is provided with a
25 lid (8).

5.

A golf club head in accordance with one or more of the claims 1-3,
characterised in that the screws (7) have a length that essentially corresponds
30 to the length of the tubular sleeve (1), and that the screws (7) are in the form of
externally threaded, cylindrical bodies.

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6.

A golf club head in accordance with Claim 5,
c h a r a c t e r i s e d i n that one or more parts of the screw (7) consists of a metal or a
metal alloy and the remaining part of the screw (7) consists of plastic, which parts are
5 joined, preferably by gluing.

7.

A golf club head in accordance with one or more of the preceding claims,
c h a r a c t e r i s e d i n that the golf club head comprises two tubular sleeves (1)
10 placed approximately symmetrically about the centre line of the striking surface (3),
with associated movable screws (7).

8.

A golf club head in accordance with one or more of the preceding claims,
15 c h a r a c t e r i s e d i n that the tubular sleeve or sleeves (1) are integrally cast with
the rest of the club head.

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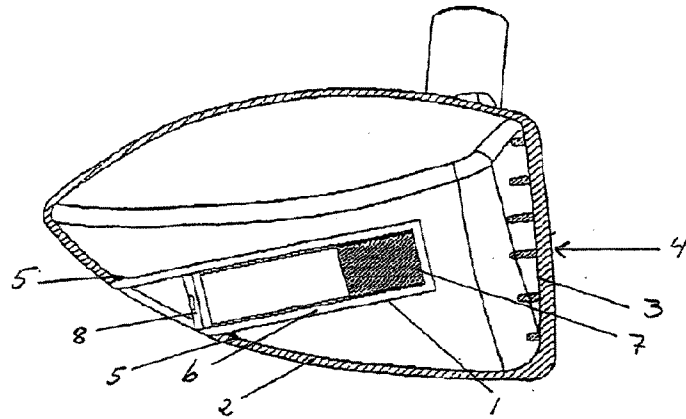


Fig. 1

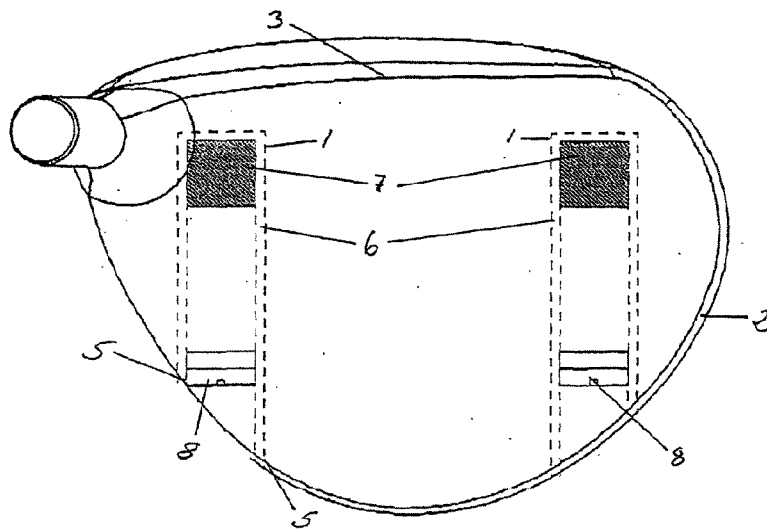


Fig. 2

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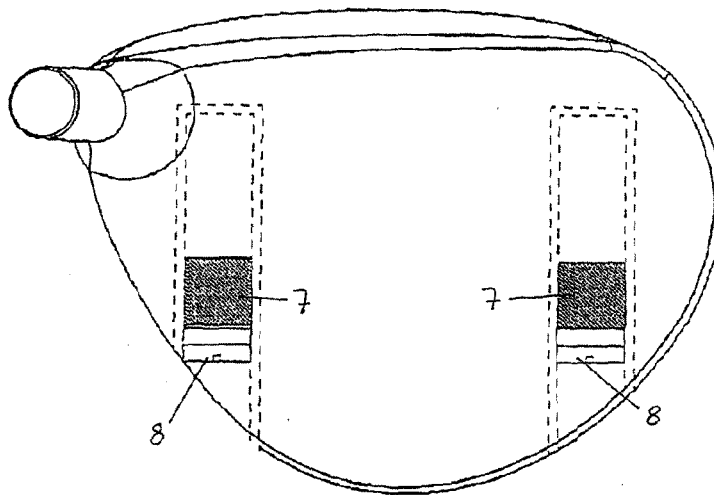


Fig. 3

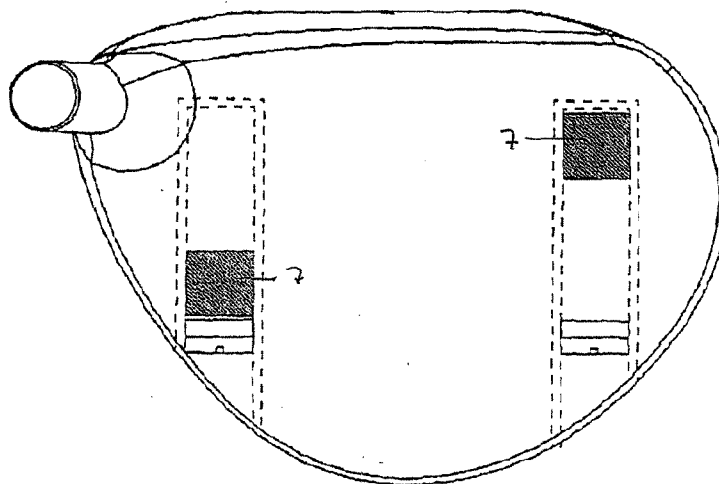


Fig. 4

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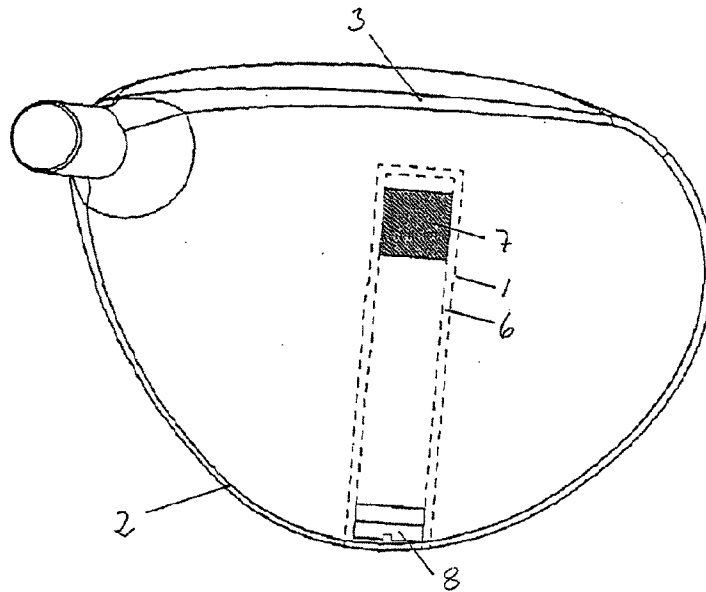


Fig. 5

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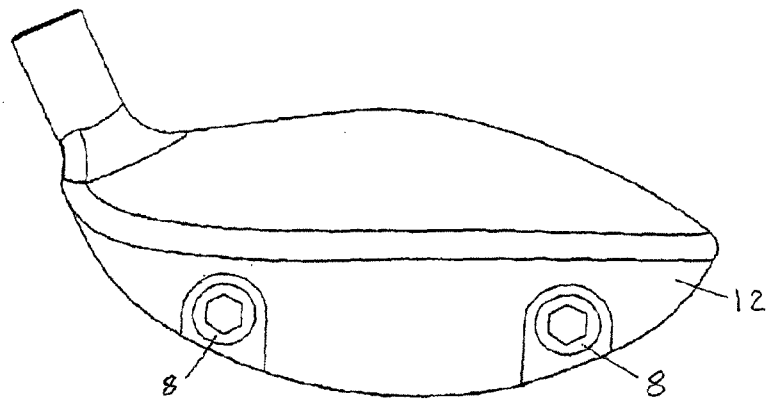


Fig. 6

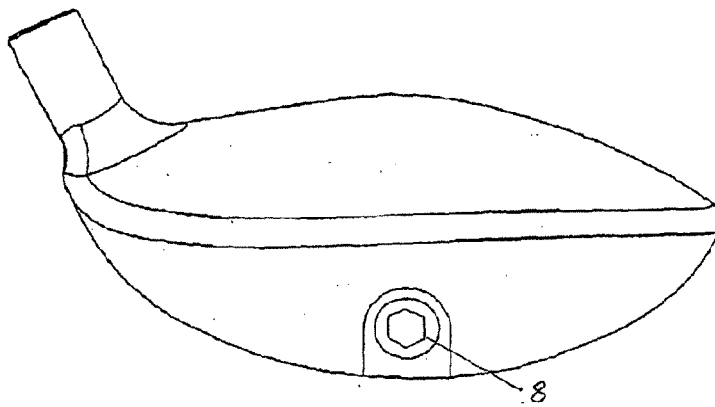


Fig. 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NO 01/00105

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A63B 53/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EDOC, JAPIO

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3897066 A (P.A. BELMONT), 29 July 1975 (29.07.75) --	1-8
A	GB 440379 A (G.E. BOWSER ET AL), 30 December 1935 (30.12.35) --	1-8
A	US 4869507 A (D. SAHM), 26 Sept 1989 (26.09.89) --	1-8
A	DE 9012884 U1 (L.B. KAO-HSIUNG), 3 January 1991 (03.01.91) -----	1-8

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

22 May 2001

Date of mailing of the international search report

01-06-2001

Name and mailing address of the ISA/

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Telephone No. +46 8 782 25 00

Form PCT/ISA/210 (second sheet) (July 1998)

A824

INTERNATIONAL SEARCH REPORT
 Information on patent family members

30/04/01

International application No.

PCT/NO 01/00105

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	3897066	A	29/07/75	US 3979123 A	07/09/76
GB	440379	A	30/12/35	NONE	
US	4869507	A	26/09/89	US 4754977 A	05/07/88
DE	9012884	U1	03/01/91	NONE	

Form PCT/ISA/210 (patent family annex) (July 1998)

A825



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MAILED

APR 10 2013

CENTRAL REEXAMINATION UNIT

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. 90/012,788.

PATENT NO. 7128660.

ART UNIT 3993.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

Ex Parte

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/012,788	02/06/2013	7128660	0EKM-175906	6916

27353 7590 04/10/2013
 MELVIN K. SILVERMAN AND ASSOCS PC
 500 WEST CYPRESS CREEK ROAD
 SUITE 350
 FT. LAUDERDALE, FL 33309

EXAMINER

GRAHAM, MATTHEW C

ART UNIT	PAPER NUMBER
----------	--------------

3993

MAIL DATE	DELIVERY MODE
-----------	---------------

04/10/2013

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Order Granting / Denying Request For Ex Parte Reexamination	Control No. 90/012,788	Patent Under Reexamination 7128660
	Examiner MATTHEW C. GRAHAM	Art Unit 3993

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The request for *ex parte* reexamination filed 06 February 2013 has been considered and a determination has been made. An identification of the claims, the references relied upon, and the rationale supporting the determination are attached.

Attachments: a) ☐ PTO-892, b) ☒ PTO/SB/08, c) ☐ Other: _____

1. ☒ The request for *ex parte* reexamination is GRANTED.

RESPONSE TIMES ARE SET AS FOLLOWS:

For Patent Owner's Statement (Optional): TWO MONTHS from the mailing date of this communication (37 CFR 1.530 (b)). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

For Requester's Reply (optional): TWO MONTHS from the **date of service** of any timely filed Patent Owner's Statement (37 CFR 1.535). **NO EXTENSION OF THIS TIME PERIOD IS PERMITTED.** If Patent Owner does not file a timely statement under 37 CFR 1.530(b), then no reply by requester is permitted.

2. ☐ The request for *ex parte* reexamination is DENIED.

This decision is not appealable (35 U.S.C. 303(c)). Requester may seek review by petition to the Commissioner under 37 CFR 1.181 within ONE MONTH from the mailing date of this communication (37 CFR 1.515(c)). **EXTENSION OF TIME TO FILE SUCH A PETITION UNDER 37 CFR 1.181 ARE AVAILABLE ONLY BY PETITION TO SUSPEND OR WAIVE THE REGULATIONS UNDER 37 CFR 1.183.**

In due course, a refund under 37 CFR 1.26 (c) will be made to requester:

a) ☐ by Treasury check or,

b) ☐ by credit to Deposit Account No. _____, or

c) ☐ by credit to a credit card account, unless otherwise notified (35 U.S.C. 303(c)).

cc:Requester (if third party requester)		
---	--	--

U.S. Patent and Trademark Office
PTOL-471 (Rev. 08-06)Office Action in *Ex Parte* Reexamination

Part of Paper No. 20130328

Application/Control Number: 90/012,788
Art Unit: 3993

Page 2

ORDER

1. A substantial new question of patentability affecting claims 1 and 9 of United States Patent Number 7,128,660 to Gillig is raised by the request for *ex parte* reexamination.

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that *ex parte* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extensions of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

The requester contends that PCT Publication WO 01/661199 to Dammen raises a substantial new question of claims 1 and 9 of Gillig.

Claim 1 recites a method of enhancing performance of a golf club, the method comprising the steps of: (a) providing a void space behind a face plate of said club and above a sole portion thereof; (b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion; (c) selectably employing two

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of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising: (i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin; (ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration; (iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or (iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice, thereby enhancing performance of said club.

Claim 9 adds that in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

Key to these claims is the recitation that the weighting means is NOT contiguous with any inner surface of the void space.

It is noted that US Patent 7,128,660 to Gillig, the patent at hand, has a filing date of April 3, 2004. This application is a continuation-in-part of application 10/383,532, filed on March 10, 2003, which itself is a continuation-in-part of earlier application 09/849,522, filed on May 7, 2000, now US Patent 6,530,848. Application 10/383,532 does not show the claimed embodiment in which the weights are *not contiguous with*

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any inner surface of the void space. This feature was first shown in application 10/818,899 filed on April 3, 2004. Accordingly, the earliest effective filing date is April 3, 2004 and therefore Dammen qualifies as prior art under 35 U.S.C. 102 (b) because it was published on September 13, 2001.

Dammen does not specifically disclose whether or not the golf club head is hollow or solid. However, a review of the prior art at the time of the invention of Dammen indicates that conventional metal drivers (the type of golf club head disclosed in Dammen) were known to be hollow. Accordingly, the head of Dammen is considered to be hollow. Therefore, Dammen teaches the void space that substantially conforms to the volume and geometry of the head. Dammen further teaches tubes 1 attached within the head for supporting user replaceable weights 7. As the weights are within the tubes, the weights are *not contiguous with any* inner surface of the void space.

There is a substantial likelihood that a reasonable examiner would consider this teaching to be important in deciding whether or not claims 1 and 9 of Gillig are patentable. Accordingly, Dammen raises a substantial new question of patentability of claims 1 and 9 of Gillig, which question has not been decided in a previous examination of Gillig.

2. The Third Party Requester has only requested the reexamination of claim 1 and 9. Accordingly, claims 2-8 and 10-19 are not subject to reexamination in this proceeding.

3. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent

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proceeding, involving Patent No. 7,128,660 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

4. Patent Owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 CFR 1.530(d)-(j), must be formally presented pursuant to 37 CFR 1.52(a) and (b), and must contain any fees required by 37 CFR 1.20(c).

5. Any inquiry concerning this communication should be directed to Matthew C. Graham at telephone number 571-272-7116.

Please mail any communications to:

Attn: Mail Stop "Ex Parte Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria VA 22313-1450

Please FAX any communications to:
(571) 273-9900
Central Reexamination Unit

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Customer Service Window
Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

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Page 6

Art Unit: 3993

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Matthew C. Graham/

Matthew C. Graham
CRU Examiner
3993
(571) 272-7116

Conferees: /BKG/
/PCE/

6/10/13

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENTEE: Gillig
RE-EXAM APPLICATION NO.: 90/012,788
RE-EXAM FILING DATE: 02/06/13
PATENT NO.: 7,128,660
ISSUED: October 31, 2006
TITLE: Method of Golf Club Performance Enhancement
And Articles Resultant Therefrom
CONFIRMATION NO. 6916
ART UNIT: 3993
EXAMINER: Graham
ATTORNEY DOCKET NO.: OEKM-175906

**PATENT OWNER'S STATEMENT
RESPONSIVE TO EX PARTE EXAMINATION
ORDER OF EXAMINER OF APRIL 10, 2013**

I. The '660 Patent

The '660 patent discloses and claims a golf club performance enhancement system that places weighting elements within a matrix, having X, Y and Z volumetric coordinates. In other words, the invention is not a relative or peripheral weight based system but, rather, one which employs an orthonormal matrix of volumetric coordinate cells imposed upon the club (100) and employs an X, Y and Z coordinate system corresponding to the three orthonormal axes of the club. See Fig. 2 (see Col. 4, Lines 29-44). The X, Y and Z axes of the orthonormal matrix (114) provide a 3x3x3 system of 27 potential volumetric coordinates (see Col. 2, Line 3 of patent).¹

¹ The X, Y and Z axes include X1, X2 X3, Y1, Y2, Y3, Z1, Z2 and Z3 cells of the matrix.

it would change the entire principle of operation of Dammen, since Dammen would be rendered incapable of its primary purpose of varying loft within a range of 8 to 10 degrees with a capability of slightly influencing slice by moving one or the other of weight 7 to a forward or backward location within the weighting channels thereof. In other words, modifying Dammen to enable the approximation of the YZ slope of '660 from a lower Y, lower Z to a higher Y, higher Z or *vice versa*, would represent a material change in the principle operation of the Dammen reference.

Certainly, as required by MPEP 2143.02(II), there could be little degree of predictability of the results of the system of Dammen if one began to change or alter the angulation of the weighting channels thereof. As such, absent a reasonable expectation of success, an obviousness rejection, based upon Dammen, of Claim 1 is inappropriate and such a rejection would be lacking in basis.

Dammen does not teach any capability of movement or repositioning of a weight from one location of the X-axis to another. The teaching of Dammen thereof is limited to the following: “In order for the golf club head to be stable, **it is also important that the masses on either side of the centre** of the striking surface (the sweet spot) **is approximately equal.**” (Dammen, Page 1, Lines 17-19) (emphasis added).

The teaching of Dammen clearly states that the respective left and right channels thereof cannot be unequally weighted. *Id.* Thus, the X-axis limitation in Claim 1 can never be satisfied by Dammen, because, to do so, would create an unbalance of the masses on either side of the center of the striking surface, a condition specifically proscribed by the teaching of Dammen. *Id.* Ergo, regardless of the X-axis *effects* discussed in the Request⁴, the actual teaching of Dammen

⁴ An effect or result is not a claim limitation. *Bristol Myers Squibb v. Ben Venue Laboratories, Inc.*, 246 F.3d 1368, 1375 (Fed. Cir. 2001); *Syntex USA, LLC v. Apotex, Inc.*, 407 F.3d 1371, 1373 (Fed. Cir. 2005).

value of Y in a second selected strategy.” (Statement, p. 5.) While the Patent Owner admits that Dammen teaches an embodiment (Fig. 4) that satisfies this limitation, it dismisses the teaching based on assumptions regarding resulting ball flight effects. (*Id.*, pp. 5-6.) The Patent Owner argues that “the only setting in Dammen in which Y1 cannot equal Y2 would be one in which one side of the club exhibits a first ballooning and trajectory parameter while the other side exhibits an opposite ballooning and trajectory parameter.” (*Id.*) The Patent Owner explains that “in the embodiment of Fig. 4 of Dammen, the respective benefits of the underscrew and trajectory expressed with regard to Figs. 2 and 3 negate each other such that the sole benefit of a Y1 not equal to Y2 setting in Fig. 4 is one which purportedly prevents the occurrence of slicing.” (*Id.*, p. 6.) The Patent Owner is mistaken.

It is well understood by persons skilled in the art that repositioning the location of the club head’s center of gravity (“CG”) will affect ball flight. (DECLARATION OF TODD BEACH, “Beach Decl.,” ¶ 12.) One known method of moving the CG is by positioning weights at various locations within a golf club head, as taught by Dammen and the '660 patent. (*Id.*)

With regard to Fig. 4 of Dammen (reproduced below), persons skilled in the art would understand that if the weights 7 in the tubular sleeves 1 were positioned equidistant and in opposite directions from the original CG (*i.e.*, before the addition of any weights), they would have the effect of canceling each other out along the Y-axis, resulting in no net movement of the original CG. (Beach Decl., ¶ 13.)

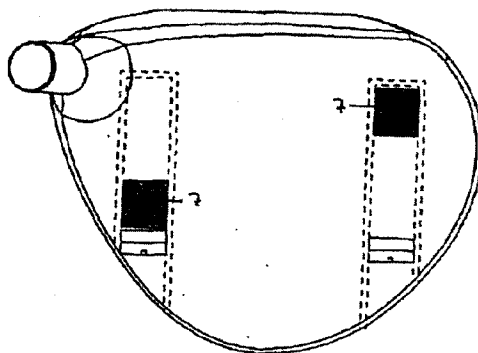


Fig. 4

in the disclosure of Dammen and per Fig. 1 thereof. Fig. 4 of Dammen is the only illustration thereof which suggests that the value of Y in one of two-weighting sleeves at X1 may not be the value of Y in its opposite symmetric weighting sleeve at X3. As such, the only setting in Dammen in which Y1 cannot equal Y2 would be one in which one side of the club exhibits a first ballooning and trajectory parameter while the other side exhibits an opposite ballooning and trajectory parameter.

(Statement, pp. 5-6.) The Patent Owner further asserts that “the respective benefits of the underscrew and trajectory expressed with regard to Figs. 2 and 3 negate each other such that the sole benefit of a Y1 not equal to Y2 setting in Fig. 4 is one which purportedly prevents the occurrence of slicing.” (*Id.*, p. 6.) I disagree that the Fig. 4 embodiment of Dammen necessarily negates or cancels out a change of the center of gravity or eliminates the respective benefits on ball flight.

12. It is well understood by persons skilled in the art that repositioning the location of the club head’s center of gravity (“CG”) will affect ball flight. One known method of moving the CG is by positioning weights at various locations within a golf club head, as taught by Dammen and the '660 patent.

13. With regard to Fig. 4 of Dammen, persons skilled in the art would understand that if the weights 7 in the tubular sleeves 1 were positioned equidistant and in opposite directions from the original CG (*i.e.*, before the addition of any weights), they would have the effect of canceling each other out along the Y-axis, resulting in no net movement of the original CG. However, persons skilled in the art would also recognize that the weights 7 may be moved independently of each other within the tubular sleeves and are not required to be positioned equidistant along the Y-axis from the original CG. For example, one weight 7 might be moved in its sleeve 1 as far from the original CG as possible, while the other weight 7 might be moved in the opposite direction in its sleeve 1 a lesser amount from the original CG. In such event, the movement of the second weight would somewhat offset the movement of the first weight, but they would not cancel each other out along the Y-axis; there would be a net movement of the CG. Thus, Dammen does allow for positioning of the weights in a manner that satisfies claim 1’s requirement that “a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy” and results in movement of the original



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/012,788	02/06/2013	7128660	0EKM-175906	6916

27353	7590	09/04/2013
MELVIN K. SILVERMAN AND ASSOCS PC		
500 WEST CYPRESS CREEK ROAD		
SUITE 350		
FT. LAUDERDALE, FL 33309		

EXAMINER	
GRAHAM, MATTHEW C	

ART UNIT	PAPER NUMBER
3993	

MAIL DATE	DELIVERY MODE
09/04/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

12275 EL CAMINO REAL,

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SAN DIEGO, CA 92130

MAILED

SEP 4 2013

CENTRAL REEXAMINATION UNIT

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. 90/012,788.

PATENT NO. 7128660.

ART UNIT 3993.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/012,788	Patent Under Reexamination 7128660	
	Examiner MATTHEW C. GRAHAM	Art Unit 3993	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

- a. ☒ Responsive to the communication(s) filed on 6/10/2013 and 8/7/2013.
☐ A declaration(s)/affidavit(s) under 37 CFR 1.130(b) was/were filed on _____.

b. ☐ This action is made FINAL.

c. ☐ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 3. <input type="checkbox"/> Interview Summary, PTO-474. |
| 2. <input type="checkbox"/> Information Disclosure Statement, PTO/SB/08. | 4. <input type="checkbox"/> _____. |

Part II SUMMARY OF ACTION

- 1a. ☒ Claims 1 and 9 are subject to reexamination.
- 1b. ☒ Claims 2-8 and 10-19 are not subject to reexamination.
2. ☐ Claims _____ have been canceled in the present reexamination proceeding.
3. ☐ Claims _____ are patentable and/or confirmed.
4. ☒ Claims 1 and 9 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ The drawings, filed on _____ are acceptable.
7. ☐ The proposed drawing correction, filed on _____ has been (7a) ☐ approved (7b) ☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
1 ☐ been received.
2 ☐ not been received.
3 ☐ been filed in Application No. _____.
4 ☐ been filed in reexamination Control No. _____.
5 ☐ been received by the International Bureau in PCT application No. _____.
* See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.
10. ☐ Other: _____

cc: Requester (if third party requester)

U.S. Patent and Trademark Office
PTOL-466 (Rev. 08-13)

Office Action in Ex Parte Reexamination

Part of Paper No. 20130827

A879

Application/Control Number: 90/012,788
Art Unit: 3993

Page 2

NON-FINAL REJECTION

1. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.


2. Claims 1 and 9 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Dammen.

Dammen does not specifically disclose whether or not the golf club head is hollow or solid. However, a review of the prior art at the time of the invention of Dammen indicates that conventional metal drivers (the type of golf club head disclosed in Dammen) were known to be hollow. In addition, Dammen shows a method of enhancing performance of a golf club, the method comprising the steps of: (a) providing a void space behind a face plate of said club and above a sole portion thereof in the hollow section as discussed above; (b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion. This virtual XYZ

Application/Control Number: 90/012,788
Art Unit: 3993


Page 3

coordinate system is completely arbitrary and applies to the head of Dammen to the same degree as the head of any golf club head or any object for that matter. Dammen further shows (c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means 7 thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy (see Fig.4.). The weights 7 are at different positions in the tubes and thus are at different Y values. The strategies comprise (iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory (the weights shown in Figure 4 are at two different Z positions); or (iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice (again the weights shown in Figure 4 are at two different X positions, thereby enhancing performance of said club. The claim does not recite adjustability of the weights for different weighting strategies. Only two strategies need to be shown to meet the claim limitation.



Regarding claim 9, the weighting means are not contiguous with any inner surface of said void space.

3. Patent Owner's Statement, filed on 6/10/2013, is acknowledged. The Third Party Requester's Reply of 8/7/2013 is also acknowledged. Regarding the Patent Owner's Statement, the remarks regarding 3x3x3 weighting system are deemed moot because this feature is not claimed. In addition the comments relating the center of



Application/Control Number: 90/012,788
Art Unit: 3993

Page 4

gravity are not pertinent because the CG is also not claimed. As to the contention that more than two weighting strategies must be shown, this is incorrect. The broadest reasonable interpretation of selectably employing two strategies is "employing two strategies". Dammen shows at least two strategies as discussed above. ✓

4. The Third Party Requester has only requested the reexamination of claim 1 and 9. Accordingly, claims 2-8 and 10-19 are not subject to reexamination in this proceeding.

5. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 7,128,660 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

6. Patent Owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 CFR 1.530(d)-(j), must be formally presented pursuant to 37 CFR 1.52(a) and (b), and must contain any fees required by 37 CFR 1.20(c). ✓

7. In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37

Application/Control Number: 90/012,788

Page 5

Art Unit: 3993

CFR 1.116, after final rejection and 37 CFR 41.33 after appeal, which will be strictly enforced.

8. Any inquiry concerning this communication should be directed to Matthew C. Graham at telephone number 571-272-7116.

Please mail any communications to:

Attn: Mail Stop "Ex Parte Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria VA 22313-1450

Please FAX any communications to:
(571) 273-9900
Central Reexamination Unit

Please hand-deliver any communications to:
Customer Service Window
Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Matthew C. Graham/

Matthew C. Graham
CRU Examiner
3993
(571) 272-7116
Conferees: /EDL/
 /PCE/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENTEE: JOHN P. GILLIG ART UNIT: 3993
RE-EXAM APPLICATION NO.: 90/012,788 CONFIRMATION NO. 7916
RE-EXAM FILING DATE: 02/06/2013
PATENT NO. : 7,128,660
ATTORNEY DOCKET NO.: OEKM-175906
EXAMINER: Graham

RESPONSE TO OFFICIAL ACTION UNDER 37 C.F.R. 1.530
IN EX-PARTE RE-EXAMINATION

Mail Stop: Ex-Parte Re-Exam
Central Re-Examination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the final Official Action dated September 4, 2013, kindly enter of record the following Amendments and Remarks:

Amendments to the Specification None

Amendments to the Claims begin on page 2 of this paper.

Status of the Claims begins on page 2 of this paper.

Amendments to the Drawings None

Remarks/Arguments begin on page 9 of this paper.

CERTIFICATE OF MAILING BY EXPRESS MAIL

Express Mail mailing label number: EH038281876 US

I hereby certify that this correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope addressed to: Mail Stop Ex-Parte Re-Exam, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

Melvin K. Silverman

Typed or printed name of person signing this certificate

Signature 

Date 12/4/13

Amended to the Claims:

This listing of claims will replace all prior versions, and prior listing of claims in this application:

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Currently amended) The method as recited in claim [5] 28, including: a selection [of Step(c)(ii)] by securing a strip-like weighting element over said void space at about a (Y2 Y3, Z2) position and spanning all X positions, thereby providing modification of penetration at a medium ball trajectory; and selection [of Step (c)(iv)] with regard to X-axis to weighting compensate for [hock] hook or slice.
8. (Cancelled)
9. (Cancelled).
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. Cancelled)
17. (Cancelled)

reversal of directionality of weighting in the Z-direction. That is, in Dammen one cannot concurrently change weighting from a (Y1, Z1) coordinate to a (Y3, Z3) coordinate or vice versa (per new Claim 24 herewith). Upon this basis alone, Dammen cannot anticipate any of Claim 20 or 24, or any claim dependent therefrom since Dammen cannot concurrently change weighting between a (Y1, Z1) and a (Y3, Z3) coordinate, or vice versa.

5. Further, and has been argued in prior submissions, X2 as well as Z3 weightings do not exist in Dammen and, at least for this reason, it cannot anticipate any newly presented claim. The issue of continuum of different weighting strategies is, to the extent that it was ever necessary to do so, now rendered clear by the use of the terms "between," and either "and" or "to," in every independent and dependent claims, not corresponding to original Claim 9, this to render, beyond question, the contemplated range of adjustability along all axes of the system. See for example Col. 3, Lines 5-15 of the original patent as well as the graphs of Figs. 4, 5, 6 and 13 thereof. Accordingly, the claims, at least as presently presented, expressly provide for adjustability of weights in different weighting strategies and, further, expressly recite that within each axis of each strategy one may select a neutral effect thereof by selectively employing weighting means at one or more neutral coordinates.

6. The 3x3x3 orthonormal matrix of weighting cells is now expressly claimed in 1)(b) of each independent claim.

7. In the new claims, every possible combination of all strategies in the specification cannot be concurrently selected. As such, the principle of "broadest possible construction" of the new claims must be viewed within the scope of the possible constructions of original Claim 1. Each extant claim encompasses well defined and different subject matter within such scope.

that Examiner failed to establish a *prima facie* case of obviousness where Examiner's combination of references to meet a claimed limitation would render one of the references unsatisfactory for their intended purposes); *Ex parte Seyyedy*, No. 2009-1696 (BPAI 2009) (finding that Examiner failed to establish obviousness where the cited references were based on disparate principles of operation).

In that Dammen cannot render Patent Holder's new claims obvious, it cannot in this case anticipate them. That is, "anticipation under Sec. 102 can be found only if a reference shows exactly what is claimed; where there are differences between the reference disclosures and the claim, a rejection must be based on obviousness under Sec. 103." *Titanium Metals Corp. v. Banner*, 778 F.2d, 227 USPQ 773 (Fed. Cir. 1985).

37 C.F.R. 1.550(g)

The newly presented claims comport with 35 C.F.R. 1.550 (g) in that that said claims do not enlarge the scope of the original Claim 1 if viewed in light of its "broadest possible construction" which is the applicable standard for prosecution purposes. That is, in the new claims, every possible combination of all strategies in original Claim 1 cannot be concurrently selected. As such, the principle of "broadest possible construction" of the new claims must be viewed within the scope of the possible constructions of original Claim 1. Each extant claim encompasses well defined and different subject matter within such scope.

The allowance of the newly presented claims is therefore appropriate and is urged.

Respectfully submitted,
TRIPLE TEE GOLF, INC.

By: 
Melvin K. Silverman
Reg. No. 26,234

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Attachment:

Check No. 2333 in the amount of \$780 for excess claims.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENTEE: JOHN P. GILLIG ART UNIT: 3993
RE-EXAM APPLICATION NO.: 90/012,788 CONFIRMATION NO. 6916
RE-EXAM FILING DATE: 02/06/2013
PATENT NO. : 7,128,660
ATTORNEY DOCKET NO.: OEKM-175906
EXAMINER: Graham

SUPPLEMENTAL RESPONSE TO OFFICIAL ACTION UNDER 37 C.F.R. 1.530
IN EX-PARTE RE-EXAMINATION

Mail Stop: Ex-Parte Re-Exam
Central Re-Examination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the final Official Action dated September 4, 2013, and our response dated December 4, 2013, Applicant respectfully submits this Supplemental Response. kindly enter of record the following Amendments and Remarks:

Amendments to the Specification None

Amendments to the Claims begin on page 2 of this paper.

Status of the Claims begins on page 2 of this paper.

Amendments to the Drawings None

Remarks/Arguments begin on page 9 of this paper.

CERTIFICATE OF TRANSMITTAL

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being transmitted to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below via the USPTO EFS Web Filing System.

12/16/13
Date of Deposit

Marcia Scruggs
name of Person Transmitting Paper

/Marcia Scruggs/
Signature of Person Transmitting Paper

PLEASE ADDRESS CORRESPONDENCE TO:
CUSTOMER NUMBER 27353

Amended to the Claims:

This listing of claims will replace all prior versions, and prior listing of claims in this application:

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Currently amended) The method as recited in claim [5] 28, including: a selection [of Step(c)(ii)] by securing a strip-like weighting element over said void space at about a (Y2 Y3, Z2) position and spanning all X positions, thereby providing modification of penetration at a medium ball trajectory; and selection [of Step (c)(iv)] with regard to X-axis to weighting compensate for [hock] hook or slice.
8. (Cancelled)
9. (Cancelled).
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. Cancelled)
17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (New) A method of enhancing performance of a golf club, the method comprising the steps of:

(a) providing a void space behind a face plate of a golf club head and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system including X1, X2 and X3 respective low-to-high locations upon an X-axis of said system, Y1, Y2, and Y3 respective low-to-high locations upon a Y-axis of said system, and Z1, Z2 and Z3 respective low-to-high locations of said system upon a Z-axis of said system within said head to define a 3x3x3 volumetric matrix of cells in which said sole is partially congruent with a bottom-most XY plane thereof, in which said sole intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said head intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction from a heel-to-toe of said head, an increase in Y-axis value corresponds in direction from a face-to-rear of said head, and an increase in Z-axis value corresponds to an increase in height above said sole; and

(c) employing the following club weighting strategy to said club head, in which at least one weighting means thereof is not contiguous to any part of said face plate, the strategy comprising:

providing, within said matrix of said void space, weighting means for concurrently changing between (i) both a low Y or Y1, and a low Z or Z1 coordinate, corresponding to increased backspin, and (ii) both a high Y or Y3, and high Z or Z3 coordinate corresponding to decreased backspin, said strategy selectably inclusive of a neutral effect (Y2, Z2) coordinate therebetween.

21. (New) The method as recited in Claim 20, in which said strategy includes weighting means not contiguous with any inner surface of said void space.

22. (New) The method as recited in Claim 20, further comprising:
positioning weighting means within said matrix of said void space between a low Z or Z1 coordinate, corresponding to increased trajectory, to a high Z or Z3 coordinate corresponding to decreased trajectory, said strategy selectably inclusive of a neutral effect Z2 coordinate therebetween.

23. (New) The method as recited in Claim 22, in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

24. (New) A method of enhancing performance of a golf club, the method comprising the steps of:

(a) providing a void space behind a face plate of a golf club head and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system including X1, X2 and X3 respective low-to-high locations upon an X-axis of said system, Y1, Y2, and Y3 respective low-to-high locations upon a Y-axis of said system, and Z1, Z2 and Z3 respective low-to-high locations of said system upon a Z-axis of said system within said head to define a 3x3x3 volumetric matrix of cells in which said sole is partially congruent with a bottom-most XY plane thereof, in which said sole intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said head intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction from a heel-to-toe of said head, an

increase in Y-axis value corresponds in direction from a face-to-rear of said head, and an increase in Z-axis value corresponds to an increase in height above said sole; and

(c) employing the following club weighting strategy to said club head, in which at least one weighting means thereof is not contiguous to any part of said face plate, the strategy comprising:

providing, within said void space, weighting means for concurrently changing between (i) both a high Y or Y3, and high Z or Z3 coordinate, corresponding to greater penetration, and (ii) both a low Y or Y1 coordinate and a low Z or Z1 coordinate, corresponding to lesser penetration, said strategy selectably inclusive of a neutral effect (Y2,Z2) coordinate therebetween.

25. (New) The method as recited in Claim 24 in which said strategy includes weighting means not contiguous with any inner surface of said void space.

26. (New) The method as recited in Claim 20, further comprising:

positioning weighting means within said matrix of said void space between a low X or X1 coordinate to compensate for hook, to an high X or X3 coordinate to compensate for slice, said strategy selectably inclusive of a neutral hook-slice effect by positioning at a X2 coordinate.

27. (New) The method as recited in Claim 26, in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

28. (New) A method of enhancing performance of a golf club, the method comprising the steps of:

(a) providing a void space behind a face plate of a golf club head and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system including X1, X2 and X3 respective low-to-high locations upon an X-axis of said system, Y1, Y2, and Y3 respective low-to-high locations upon a Y-axis of said system, and Z1, Z2 and Z3 respective low-to-high locations of said system upon a Z-axis of said system within said head to define a 3x3x3 volumetric matrix of cells in which said sole is partially congruent with a bottom-most XY plane thereof, in which said sole intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said head intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction from a heel-to-toe of said head, an increase in Y-axis value corresponds in direction from a face-to-rear of said head, and an increase in Z-axis value corresponds to an increase in height above said sole; and

(c) employing both of the following club weighting strategies to said club head, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:

(i) positioning weighting means within said matrix of said void space between a low Z or Z1 coordinate corresponding to increased trajectory, to a high Z or Z3 coordinate corresponding to decreased trajectory, said strategy selectably inclusive of a neutral effect on trajectory by positioning at a Z2 coordinate; and

(ii) positioning weighting means within said matrix of said void space between a low X or X1 coordinate to compensate for hook, to an high X or X3 coordinate to compensate for slice, said strategy selectably inclusive of a neutral hook-slice effect by positioning at a X2 coordinate.

29. (New) The method as recited in Claim 28, in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

reversal of directionality of weighting in the Z-direction. That is, in Dammen one cannot concurrently change weighting from a (Y1, Z1)) coordinate to a (Y3, Z3) coordinate or *vice versa* (per new Claim 24 herewith). Upon this basis alone, Dammen cannot anticipate any of Claim 20 or 24, or any claim dependent therefrom since Dammen cannot concurrently change weighting between a (Y1, Z1) and a (Y3, Z3) coordinate, or *vice versa*.

5. Further, and has been argued in prior submissions, X2 as well as Z3 weightings do not exist in Dammen and, at least for this reason, it cannot anticipate any newly presented claim. The issue of continuum of different weighting strategies is, to the extent that it was ever necessary to do so, now rendered clear by the use of the terms “between,” and either “and” or “to,” in every independent and dependent claims, not corresponding to original Claim 9, this to render, beyond question, the contemplated range of adjustability along all axes of the system. See for example Col. 3, Lines 5-15 of the original patent as well as the graphs of Figs. 4, 5, 6 and 13 thereof. Accordingly, the claims, at least as presently presented, expressly provide for adjustability of weights in different weighting strategies and, further, expressly recite that within each axis of each strategy one may select a neutral effect thereof by selectively employing weighting means at one or more neutral coordinates.

6. The 3x3x3 orthonormal matrix of weighting cells is now expressly claimed in ¶(b) of each independent claim.

7. In the new claims, every possible combination of all strategies in the specification cannot be concurrently selected. As such, the principle of “broadest possible construction” of the new claims must be viewed within the scope of the possible constructions of original Claim 1. Each extant claim encompasses well defined and different subject matter within such scope.

Office Action in Ex Parte Reexamination	Control No. 90/012,788	Patent Under Reexamination 7128660	
	Examiner MATTHEW C. GRAHAM	Art Unit 3993	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

- a. ☒ Responsive to the communication(s) filed on 12/16/2013.
☐ A declaration(s)/affidavit(s) under 37 CFR 1.130(b) was/were filed on ____.
- b. ☒ This action is made FINAL.
- c. ☐ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 3. <input type="checkbox"/> Interview Summary, PTO-474. |
| 2. <input type="checkbox"/> Information Disclosure Statement, PTO/SB/08. | 4. <input type="checkbox"/> ____. |

Part II SUMMARY OF ACTION

- 1a. ☒ Claims 7 and 20-29 are subject to reexamination.
- 1b. ☐ Claims ____ are not subject to reexamination.
2. ☒ Claims 1-6 and 8-19 have been canceled in the present reexamination proceeding.
3. ☐ Claims ____ are patentable and/or confirmed.
4. ☒ Claims 7 and 20-29 are rejected.
5. ☐ Claims ____ are objected to.
6. ☐ The drawings, filed on ____ are acceptable.
7. ☐ The proposed drawing correction, filed on ____ has been (7a) ☐ approved (7b) ☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
1 ☐ been received.
2 ☐ not been received.
3 ☐ been filed in Application No. ____.
4 ☐ been filed in reexamination Control No. ____.
5 ☐ been received by the International Bureau in PCT application No. ____.
- * See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.
10. ☐ Other: ____

cc: Requester (if third party requester)

U.S. Patent and Trademark Office
PTOL-466 (Rev. 08-13)

Office Action in Ex Parte Reexamination

Part of Paper No. 20140226

A920

Application/Control Number: 90/012,788
Art Unit: 3993

Page 2

FINAL REJECTION

1. Receipt is acknowledged of the amendment filed on 12/16/2013. The amendment adds claims 20-29 and changes the dependency of claim 7 to now depend on new claim 28. Claim 7 was not requested for reexamination. However, as claim 7 now depends on a new claim, claim 7 is being reexamined. Claims 1-6 and 8 -19 have been canceled.

2. Claims 20-29 and 7 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claim 20 is indefinite in that it is confusing. Line 1 recites a "golf club" and line 2 recites a "golf club head". In paragraph (c) of the claim "said club head" is recited. This recitation lacks clear antecedent basis and the recitation of the "club" and "club head" are confusing. The recitation of the "sole", in lines 9 and 13, also lack clear antecedent basis in that a "sole portion" is previously claimed. The claim is also confusing in that the recitations of "said sole" in line 9 fails to correspond to the original claims which recited a "face" that intersects a forward-most XZ plane.

Claims 21-23 are indefinite due to their dependency on claim 20.

Claims 24 and 28 are also indefinite for the reasons as set forth regarding claim 20 in relation to the "golf cub head" "golf club" "club head", "sole" and "sole portion" and the use of the "sole" where a "face" was recited in the original claims. Claims 25-27 are

Application/Control Number: 90/012,788
Art Unit: 3993

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indefinite due to their dependency on claim 24. Claims 29 and 7 are indefinite due to their dependency on claim 28.

3. Claims 20-29 and 7 are rejected under 35 U.S.C. 305 as enlarging the scope of the claim(s) of the patent being reexamined. In 35 U.S.C. 305, it is stated that “[n]o proposed amended or new claim enlarging the scope of a claim of the patent will be permitted in a reexamination proceeding...” A claim presented in a reexamination “enlarges the scope” of the patent claim(s) where the claim is broader than any claim of the patent. A claim is broader in scope than the original claims if it contains within its scope any conceivable product or process which would not have infringed the original patent. A claim is broadened if it is broader in any one respect, even though it may be narrower in other respects.

Independent claims 20, 24 and 28 are devoid of the originally recited “selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising: (i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin; (ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration; (iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-

Application/Control Number: 90/012,788
Art Unit: 3993

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coordinate to decrease trajectory; or (iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice, thereby enhancing performance of said club”.

Claims 21-23, 25-27, 29 and 7 are rejected due to their dependency on claims 20, 24 and 28 respectively.

4. Claim 28 is rejected under U.S.C. 102(b) as being anticipated by Dammen.

Dammen does not specifically disclose whether or not the golf club head is hollow or solid. However, a review of the prior art at the time of the invention of Dammen indicates that conventional metal drivers (the type of golf club head disclosed in Dammen) were known to be hollow. In addition, Dammen shows a method of enhancing performance of a golf club, the method comprising the steps of: (a) providing a void space behind a face plate of said club and above a sole portion thereof in the hollow section as discussed above; (b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion. This virtual XYZ

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coordinate system is completely arbitrary and applies to the head of Dammen to the same degree as the head of any golf club head or any object for that matter. Dammen further shows (c) employing both of the following club weighting strategies to said club, in which at least one weighting means 7 thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy (see Fig.4.). The weights 7 are at different positions in the tubes and thus are at different Y values. The first strategy comprises (i) modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory (the weights shown in Figure 4 are at two different Z positions). The second strategy comprises (ii) positioning the two weighting means along different X coordinates to compensate for hook to the broad degree recited in that the two weighting means are at two different X coordinates. ✓

5. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 7,128,660 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

6. Patent Owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 CFR

Application/Control Number: 90/012,788
Art Unit: 3993

Page 6

1.530(d)-(j), must be formally presented pursuant to 37 CFR 1.52(a) and (b), and must contain any fees required by 37 CFR 1.20(c).

7. In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action.

8. Patent Owner's arguments are deemed moot with respect to claims 20-29 and 7 due to the amendment which has necessitated new grounds of rejection. As to claim 28, Dammen does show using the two strategies as discussed above in paragraph 4.

9. Patent Owner is advised to contact the office to arrange an interview to address possible patentable features in the claims.

10. **THIS ACTION IS MADE FINAL.**

A shortened statutory period for response to this action is set to expire 2 months from the mailing date of this action.

Extensions of time under 37 CFR 1.136(a) do not apply in reexamination proceedings. The provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Further, in 35 U.S.C. 305 and in 37 CFR 1.550(a), it is required that reexamination proceedings "will be conducted with special dispatch within the Office."

Extensions of time in reexamination proceedings are provided for in 37 CFR 1.550(c). A request for extension of time must specify the requested period of extension and it must be accompanied by the petition fee set forth in 37 CFR 1.17(g).

<i>Ex Parte Reexamination Interview Summary</i>	Control No.	Patent Under Reexamination
	90/012,788	7128660
	Examiner	Art Unit
	MATTHEW C. GRAHAM	3993

All participants (USPTO personnel, patent owner, patent owner's representative):

(1) <u>MATTHEW C. GRAHAM</u>	(3) <u>Andres Kashnikow</u>
(2) <u>Peter English</u>	(4) <u>Melvin Silverman and Jaqueline Tadros</u>

Date of Interview: 24 April 2014

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal (copy given to: 1) ☐ patent owner 2) ☐ patent owner's representative)

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
If Yes, brief description: _____

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.
Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to..."

Claim(s) discussed: 7 and 20-29.

Identification of prior art discussed: Nomura.

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:
Patent Owner's rep was informed that the new claims, except for claim 28, would be considered to be patentable if amended to overcome the 112 and broadening issues. Examiner advised the Patent Owner's rep to amend claim 28 to add recitation along the lines that a weighting strategy of increasing the Z axis does not include decreasing the Y-axis.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN **ONE MONTH** FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW (37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNER'S STATEMENT CAN NOT BE WAIVED. **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

/Matthew C. Graham/	/PLE/	/AK/
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cc: Requester (if third party requester)

Amendments to the Claims:

This listing of claims will replace all prior versions, and prior listing of claims in this application:

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Currently amended) The method as recited in claim [5] 30, including: a selection [of Step(c)(ii)] by securing a strip-like weighting element over said void space at about a (Y2 Y3, Z2) position and spanning all X positions, thereby providing modification of penetration at a medium ball trajectory; and weighting selection [of Step (c)(iv)] with regard to the X-axis to compensate for [hock] hook or slice.
8. (Cancelled)
9. (Cancelled).
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)

16. Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (New) The method as recited in Claim 30, further comprising:

positioning weighting means within said matrix of said void space between a low Z or Z1 coordinate, corresponding to increased trajectory, to a high Z or Z3 coordinate corresponding to decreased trajectory, said strategy selectably inclusive of a neutral effect Z2 coordinate therebetween.

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (New) The method as recited in Claim 30, further comprising:

positioning weighting means within said matrix of said void space between a low X or X1 coordinate to compensate for hook, to an high X or X3 coordinate to compensate for slice, said strategy selectably inclusive of a neutral hook-slice effect by positioning at a X2 coordinate.

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (New) A method of enhancing performance of a golf club head, the method comprising the steps of:

(a) providing a void space behind a face plate of the golf club head and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system including X1, X2 and X3 respective low-to-high locations upon an X-axis of said system, Y1, Y2, and Y3 respective low-to-high locations upon a Y-axis of said system, and Z1, Z2 and Z3 respective low-to-high locations of said system upon a Z-axis of said system within said head to define a 3x3x3 volumetric matrix of cells in which said sole portion is partially congruent with a bottom-most XY plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said head intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction from a heel-to-toe of said head, an increase in Y-axis value corresponds in direction from a face-to-rear of said head, and an increase in Z-axis value corresponds to an increase in height above said sole portion; and

(c) selectably employing two of the following weighting strategies to said club head, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:

(i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin in which an increase in a Z-axis value does not correspond to a decrease in Y-axis value;

(ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;

(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or

(iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice,

in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/012,788	02/06/2013	7128660	0EKM-175906	6916

27353	7590	05/22/2014
MELVIN K. SILVERMAN & ASSOCS.		
1000 West McNab Road, Suite 308		
Pompano Beach, FL 33069		

EXAMINER	
GRAHAM, MATTHEW C	

ART UNIT	PAPER NUMBER
3993	

MAIL DATE	DELIVERY MODE
05/22/2014	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
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 Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/012,788	02/06/2013	7128660	0EKM-175906	6916

27353	7590	04/25/2014
MELVIN K. SILVERMAN & ASSOCS.		
1000 West McNab Road, Suite 308		
Pompano Beach, FL 33069		

EXAMINER	
GRAHAM, MATTHEW C	

ART UNIT	PAPER NUMBER
3993	

MAIL DATE	DELIVERY MODE
04/25/2014	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

12275 EL CAMINO REAL,

SUITE 200

SAN DIEGO, CA 92130

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. 90/012,788.

PATENT NO. 7128660.

ART UNIT 3993.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Ex Parte Reexamination Interview Summary	Control No.	Patent Under Reexamination
	90/012,788	7128660
	Examiner	Art Unit
	MATTHEW C. GRAHAM	3993

All participants (USPTO personnel, patent owner, patent owner's representative):

(1) <u>MATTHEW C. GRAHAM</u>	(3) <u>Andres Kashnikow</u>
(2) <u>Peter English</u>	(4) <u>Melvin Silverman and Jaqueline Tadros</u>

Date of Interview: 24 April 2014

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal (copy given to: 1) ☐ patent owner 2) ☐ patent owner's representative)

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
If Yes, brief description: _____

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.
Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to..."

Claim(s) discussed: 7 and 20-29.

Identification of prior art discussed: Nomura.

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:
Patent Owner's rep was informed that the new claims, except for claim 28, would be considered to be patentable if amended to overcome the 112 and broadening issues. Examiner advised the Patent Owner's rep to amend claim 28 to add recitation along the lines that a weighting strategy of increasing the Z axis does not include decreasing the Y-axis.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN **ONE MONTH** FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW (37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNER'S STATEMENT CAN NOT BE WAIVED. **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

/Matthew C. Graham/	/PLE/	/AK/
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cc: Requester (if third party requester)

Notice of Intent to Issue Ex Parte Reexamination Certificate	Control No.	Patent Under Reexamination	
	90/012,788	7128660	
	Examiner	Art Unit	AIA (First Inventor to File) Status
	MATTHEW C. GRAHAM	3993	No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. ☒ Prosecution on the merits is (or remains) closed in this *ex parte* reexamination proceeding. This proceeding is subject to reopening at the initiative of the Office or upon petition. Cf. 37 CFR 1.313(a). A Certificate will be issued in view of
 - (a) ☒ Patent owner's communication(s) filed: 02 May 2014.
 - (b) ☐ Patent owner's failure to file an appropriate timely response to the Office action mailed: _____.
 - (c) ☐ Patent owner's failure to timely file an Appeal Brief (37 CFR 41.31).
 - (d) ☐ The decision on appeal by the ☐ Board of Patent Appeals and Interferences ☐ Court dated _____
 - (e) ☐ Other: _____.
2. The Reexamination Certificate will indicate the following:
 - (a) Change in the Specification: ☐ Yes ☒ No
 - (b) Change in the Drawing(s): ☐ Yes ☒ No
 - (c) Status of the Claim(s):
 - (1) Patent claim(s) confirmed: _____.
 - (2) Patent claim(s) amended (including dependent on amended claim(s)): 7
 - (3) Patent claim(s) canceled: 1-6 and 8-19.
 - (4) Newly presented claim(s) patentable: See Continuation Sheet.
 - (5) Newly presented canceled claims: 20,21,23-25 and 27-29.
 - (6) Patent claim(s) ☐ previously ☐ currently disclaimed: _____
 - (7) Patent claim(s) not subject to reexamination: _____.
3. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
4. ☒ Note the attached statement of reasons for patentability and/or confirmation. Any comments considered necessary by patent owner regarding reasons for patentability and/or confirmation must be submitted promptly to avoid processing delays. Such submission(s) should be labeled: "Comments On Statement of Reasons for Patentability and/or Confirmation."
5. ☐ Note attached NOTICE OF REFERENCES CITED (PTO-892).
6. ☐ Note attached LIST OF REFERENCES CITED (PTO/SB/08 or PTO/SB/08 substitute).
7. ☐ The drawing correction request filed on _____ is: ☐ approved ☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
 - ☐ been received.
 - ☐ not been received.
 - ☐ been filed in Application No. _____.
 - ☐ been filed in reexamination Control No. _____.
 - ☐ been received by the International Bureau in PCT Application No. _____.

* Certified copies not received: _____.
9. ☐ Note attached Examiner's Amendment.
10. ☐ Note attached Interview Summary (PTO-474).
11. ☐ Other: _____.

All correspondence relating to this reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

cc: Requester (if third party requester)

U.S. Patent and Trademark Office
PTOL-469 (Rev. 08-13)

Notice of Intent to Issue Ex Parte Reexamination Certificate

Part of Paper No 20140508

A939

Continuation Sheet (PTOL-469)

Reexam Control No. 90/012,788

Continuation of (4) Newly presented claim(s) patentable: 22, 26 and 30 (renumbered respectively as 22, 21 and 20) .

Application/Control Number: 90/012,788
Art Unit: 3993

Page 2

NIRC

1. Receipt is acknowledged of the amendment filed on 5/2/2014, which has been entered

STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

2. The following is an examiner's statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding: The prior art, including Dammen, fails to show or suggest the limitations of new claim 30 of "selectably employing two of the following weighting strategies to said club head. in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:

(i) to modify for backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin in which an increase in a Z-axis value does not correspond to a decrease in Y-axis value;

(ii) to modify for ball penetration providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;

(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory, or

Application/Control Number: 90/012,788
Art Unit: 3993

Page 3

(iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice in which at least one selected strategy includes weighting means not contiguous with any inner surface of said void space."

Dammen only shows modifying between a low and high Z coordinate. The claim requires selecting at least two of the strategies.

Claims 7, 22 and 26 are considered to be patentable due to their dependency on claim 30.

Any comments considered necessary by PATENT OWNER regarding the above statement must be submitted promptly to avoid processing delays. Such submission by the patent owner should be labeled: "Comments on Statement of Reasons for Patentability and/or Confirmation" and will be placed in the reexamination file.

3. Any inquiry concerning this communication should be directed to Matthew C. Graham at telephone number 571-272-7116.

Please mail any communications to:

Attn: Mail Stop "Ex Parte Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria VA 22313-1450

Please FAX any communications to:

(571) 273-9900
Central Reexamination Unit

Please hand-deliver any communications to:

Application/Control Number: 90/012,788

Page 4

Art Unit: 3993

Customer Service Window
Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Matthew C. Graham/

Matthew C. Graham
CRU Examiner
3993
(571) 272-7116

Conferees: /EDL/
/PCE/

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,128,660 B2
APPLICATION NO. : 10/818899
DATED : October 31, 2006
INVENTOR(S) : John P. Gillig

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On Title Page item (73) Assignee, change

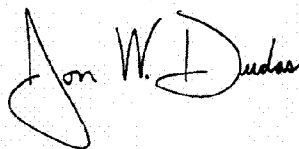
“(73) Assignee: Elizabeth P. Gillig Revocable Trust, Duxbury, MA (US)”

to

--(73) Assignee: Triple Tee Golf, Inc., Pompano Beach, FL (US)--

Signed and Sealed this

Thirty-first Day of July, 2007

A handwritten signature in black ink, reading "Jon W. Dudas". The signature is stylized, with a large, looped initial "J" and a cursive "Dudas".

JON W. DUDAS
Director of the United States Patent and Trademark Office

PTO/SB/58 (02-12)

Approved for use through 02/28/2013. OMB 0651-0064
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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(Also referred to as FORM PTO-1465)

REQUEST FOR *INTER PARTES* REEXAMINATION TRANSMITTAL FORMAddress to:
**Mail Stop *Inter Partes* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**Attorney Docket No.: 0EKM-168548Date: July 20, 2012

1. ☒ This is a request for *inter partes* reexamination pursuant to 37 CFR 1.913 of patent number 7,128,660 issued October 31, 2006. The request is made by a third party requester, identified herein below.
2. ☒ a. The name and address of the person requesting reexamination is:
Taylor Made Golf Company, Inc.
5545 Fermi Court
Carlsbad, California 92008
- b. The real party in interest (37 CFR 1.915(b)(8)) is: Taylor Made Golf Company, Inc.
3. ☐ a. A check in the amount of \$ _____ is enclosed to cover the reexamination fee, 37 CFR 1.20(c)(2);
- ☒ b. The Director is hereby authorized to charge the fee as set forth in 37 CFR 1.20(c)(2) to Deposit Account No. 19-1853; or
- ☐ c. Payment by credit card. Form PTO-2038 is attached.
4. ☒ Any refund should be made by ☐ check or ☒ credit to Deposit Account No. 19-1853. 37 CFR 1.26(c). If payment is made by credit card, refund must be made to credit card account.
5. ☒ A copy of the patent to be reexamined having a double column format on one side of a separate paper is enclosed. 37 CFR 1.915(b)(5)
6. ☐ CD-ROM or CD-R in duplicate, Computer Program (Appendix) or large table
☐ Landscape Table on CD
7. ☐ Nucleotide and/or Amino Acid Sequence Submission
If applicable, items a. - c. are required.
- a. ☐ Computer Readable Form (CRF)
- b. Specification Sequence Listing on:
i. ☐ CD-ROM (2 copies) or CD-R (2 copies); or
ii. ☐ paper
- c. ☐ Statements verifying identity of above copies
8. ☐ A copy of any disclaimer, certificate of correction or reexamination certificate issued in the patent is included.
9. ☒ Reexamination of claim(s) 1 - 6, 8 - 14, and 16 - 19 is requested.
10. ☒ A copy of every patent or printed publication relied upon is submitted herewith including a listing thereof on Form PTO/SB/08, PTO-1449, or an equivalent.
11. ☐ An English language translation of all necessary and pertinent non-English language patents and/or printed publications is included.

[Page 1 of 2]

This collection of information is required by 37 CFR 1.915. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop *Inter Partes* Reexam, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/58 (02-12)

Approved for use through 02/28/2013. OMB 0651-0064

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

12. ☒ The attached detailed request includes at least the following items:
- A listing of the grounds that the requester asserts to raise a showing of a reasonable likelihood that the requester will prevail with respect to at least one of the claims challenged in the request. 37 CFR 1.915(b)(3).
 - For each ground listed, an identification of every claim to which the showing applies, and a detailed explanation of the pertinency and manner of applying the patents and printed publications to every claim which is identified for that ground. 37 CFR 1.915(b)(3).
13. ☒ It is certified that the estoppel provisions of 37 CFR 1.907 do not prohibit this reexamination. 37 CFR 1.915(b)(7).
14. ☒ a. It is certified that a copy of this request has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c).
The name and address of the party served and the date of service are:
- Melvin Silverman, Esq. M. K. Silverman & Associates, P.C., 500 West Cypress Creek Road, Suite 350, Ft. Lauderdale, FL 33309
(with a copy to Melvin Silverman, Esq. M. K. Silverman & Associates, P.C., One Gateway Center, Ste. 2600, Newark, NJ 07102)
- Date of Service: July 20, 2012; or
- ☐ b. A duplicate copy is enclosed because service on patent owner was not possible. An explanation of the efforts made to serve patent owner **is attached**. See MPEP 2620.

15. Third Party Requester Correspondence Address: Direct all communications about the reexamination to:

☒ The address associated with Customer Number: 30764

OR

☐ Firm or
Individual Name _____

Address _____

City _____

State _____

Zip _____

Country _____

Telephone _____

Email _____

16. ☒ The patent is currently the subject of the following concurrent proceeding(s):

- ☐ a. Copending reissue Application No. _____
- ☐ b. Copending reexamination Control No. _____
- ☐ c. Copending Interference No. _____
- d. Copending litigation styled:
Triple Tee Golf, Inc. v. Taylor-Made/Adidas, Case No. 11-CV-2974-JLS (WVG)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Gary A. Clark
Authorized Signature

July 20, 2012
Date

Gary A. Clark
Typed/Printed Name

28,060
Registration No., if applicable

[Page 2 of 2]

A947

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Control No.:	N/A	Confirm No. N/A
Patent No.:	7,128,660	
Issued:	October 31, 2006	
Title:	METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM	
Inventor:	John P. Gillig	
Docket No.:	0EKM-168548	
Date:	July 20, 2012	

REQUEST FOR *INTER PARTES* REEXAMINATION
OF U.S. PATENT NO. 7,128,660

Assistant Commissioner for Patents
Box Reexam
Washington, D.C. 20231

Sir,

Requester, Taylor Made Golf Company, Inc., hereby requests *inter partes* reexamination of U.S. Patent No. 7,128,660 ("the '660 patent") entitled "Method of Golf Club Performance Enhancement and Articles Resultant Therefrom," which issued on October 31, 2006, in the name John P. Gillig as inventor.

In accordance with the requirements of 37 C.F.R. § 1.915(b)(1)-(3):

- (a) An identification of every claim of the '660 patent for which reexamination is requested is presented in section I of this Request.
- (b) An identification of the prior art that demonstrates the unpatentability of the claims is presented in section II of this Request.
- (c) A statement demonstrating that Requester is likely to prevail on its challenge of at least one claim of the '660 patent is presented in section III of this Request.
- (d) A detailed explanation of the pertinence and manner of applying the prior

art to every claim for which reexamination is requested is presented in section IV, including the claim charts attached as **Appendices A-E** to this Request.

I. Identification of Claims for Which Reexamination is Requested

In accordance with 35 U.S.C. § 311 and 37 C.F.R. § 1.915(b)(1)-(2), Requester seeks reexamination of claims 1-6, 8-14 and 16-19 of the '660 patent.

II. Identification of the Prior Art References

The following prior art references are presented to show that claims 1-6, 8-14 and 16-19 of the '660 patent are not patentable and should be cancelled:

- (1) U.S. Patent No. 5,447,309 to Vincent ("Vincent");
- (2) U.S. Patent No. 5,911,638 to Parente, et al. ("Parente");
- (3) U.S. Patent No. 1,518,316 to Ellingham ("Ellingham");
- (4) U.S. Patent No. 7,004,852 to Billings ("Billings"); and
- (5) U.S. Patent No. 7,166,040 to Hoffman, et al. ("Hoffman").

III. Statement Demonstrating That Requester Is Likely To Prevail With Respect To At Least One Claim Of The '660 Patent

A. Summary

In accordance with 35 U.S.C. § 312(a), as amended effective September 16, 2011, Requester submits that:

1. Claims 1-6, 8, 10-14 and 16-19 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Vincent.
2. Claims 1-6, 8-14 and 16-19 of the '660 patent are unpatentable under 35 U.S.C. § 102(b) as anticipated by Parente.
3. Claim 9 of the '660 patent is unpatentable under 35 U.S.C. § 103(a) as obvious over Parente in view of Ellingham.
4. Claims 1-6, 8, 10-14 and 16-19 of the '660 patent are unpatentable under 35 U.S.C. § 102(e) as anticipated by Billings.

5. Claims 1-6, 8-14 and 16-19 of the '660 patent are unpatentable under 35 U.S.C. § 102(e) as anticipated by Hoffman.

In section III.B below, Requester provides an overview of the '660 patent. In section III.C, *infra*, Requester addresses issues of claim construction that are raised by this reexamination request. In section III.D, *infra*, Requester shows that the earliest priority date of the claims of the '660 patent is April 3, 2004, the filing date of the application for the '660 patent. In other words, none of the claims of the '660 patent are entitled to the benefit of the filing date of any earlier application referenced in the '660 patent application.¹ In section III.E, *infra*, Requester discusses the prior art it relies upon to demonstrate a “reasonable likelihood” that it will prevail with respect to at least one claim of the '660 patent.

B. Overview of the '660 Patent

The '660 patent relates to “a method of selectably varying the center of gravity and distribution of weighting in a void space in the head of a golf club.” ('660 patent, col. 1, lines 19-21.) The Abstract succinctly summarizes the subject matter of the '660 patent:

The performance of a golf club may be enhanced through the provision of a void space behind a face plate and above the sole plate, to decrease club weight and provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space. The weighting coordinates are provided in response to ball strike, flight analysis and physiologic observation of the golf strike swing. Ball

¹ Requester notes that the determination of whether the claims of the '660 patent are entitled to an earlier priority date is within the scope of an *inter partes* reexamination. As set forth in MPEP § 2617:

The statement applying the prior art may, where appropriate, point out that claims in the patent for which reexamination is requested are entitled only to the filing date of that patent and are not supported by an earlier foreign or United States patent application whose filing date is claimed. For example, even where a patent is a continuing application under 35 U.S.C. 120, the effective date of some of the claims could be the filing date of the child application which resulted in the patent, because those claims were not supported in the parent application. Therefore, any intervening patents or printed publications would be available as prior art. *See In re Ruschetta*, 255 F.2d 687, 118 USPQ 101 (CCPA 1958), *In re van Langenhoven*, 458 F.2d 132, 173 USPQ 426 (CCPA 1972). *See also* MPEP § 201.11.

backspin, trajectory, penetration and hook or slice may be modified through the use of a definable weighting strategy.

(*Id.*, Abstract.)

While acknowledging others' "recognition of the importance of proper weighting within the head of a golf putter to compensate for physiologic needs and preferences of a golfer" ('660 patent, col. 1, lines 50-53), the applicant asserts that he discovered

many more options for positioning of the CG [center of gravity] and distribution of weight or weights within the head of a golf club, whether that club comprises an iron, a wood, or a hybrid thereof, in positioning, behind the club face, selectable high density weighting elements at coordinates of an orthonormal matrix up to 27 potential locations in a void space, to thus compensate for physiologic imperfections in one or more characteristic of the swing of a golfer.

(*Id.*, col. 1, line 65 – col. 2, line 5.) To this end, the applicant described the primary object of his invention as

to provide a golf club having a weight modifiable club head, inclusive of interchangeable sole plates and/or weighting elements, which express a universal method of golf club head modification to account for ball backspin, penetration, trajectory, and hook or slice.

(*Id.*, col. 2, lines 62-67.)

Figures 2 and 14, reproduced below, are representative of the manner in which the applicant applies an X, Y, Z orthonormal coordinate system to a golf club head to identify the various locations in which he provides weighting elements to modify the club head:

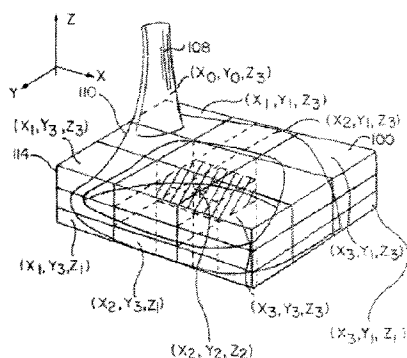


FIG. 2

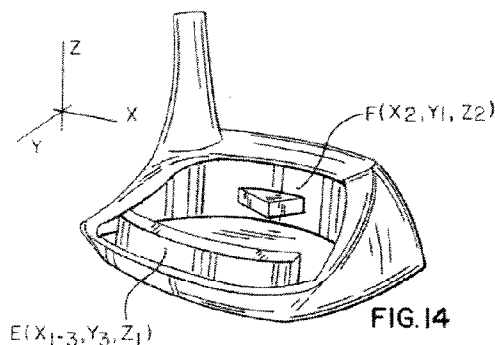


FIG. 14

C. Claim Construction

Claim 1 is representative and reads as follows:

1. A method of enhancing performance of a golf club, the method comprising the steps of:

- (a) providing a void space behind a face plate of said club and above a sole portion thereof;
- (b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion;
- (c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:
 - (i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin;
 - (ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;
 - (iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory; or
 - (iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice,

thereby enhancing performance of said club.

('660 patent, col. 7, line 44 – col. 8, line 16.)

During reexamination, claims are given their “broadest reasonable interpretation” consistent with the specification. MPEP § 2258(G) (*citing In re Yamamoto*, 740 F.2d 1569, 222 USPQ 934 (Fed. Cir. 1984)). This is not the broadest interpretation, but rather one that would be considered reasonable by a person of ordinary skill in the art. *In re Am. Academy Of Science Tech Ctr.*, 367 F.3d 1359, 1368, 70 USPQ.2d 1827, 1830 (Fed. Cir. 2004). Thus, the discussion below is directed to the broadest reasonable interpretation of the terms and phrases consistent with the specification.

1. “Sole portion”

Independent claims 1 and 11 of the '660 patent each recite the claim term “sole portion.” ('660 patent, col. 7, line 47 & col. 8, line 57.) The applicable ordinary definition of “sole” is “the usually flat or flattened bottom or lower part of something or the base on which something rests.” <http://www.merriam-webster.com/dictionary/sole>. As applied to a golf club head, “sole” means “The part on which something else rests while in a vertical position, especially: ... The bottom surface of the head of a golf club.” <http://education.yahoo.com/reference/dictionary/entry/sole>. See also <http://www.golf-components.com/golf-club-irons-terms.html> (“The bottom or underside of any type of golf club. It is where the club rests on the ground in playing position.”). The applicable ordinary definition of “portion” is “an often limited part of a whole.” <http://www.merriam-webster.com/dictionary/portion>. Thus, the broadest reasonable interpretation of “sole portion” is the bottom or underside part of the golf club head where it rests on the ground in the playing position.

2. “Providing a void space...”

Independent claims 1 and 11 of the '660 patent each recite the step of “(a) providing a void space behind a face plate of said club and above a sole portion thereof.” ('660 patent, col. 7, lines 46-47 & col. 8, lines 56-57.) The applicable ordinary definition of “void” is “not occupied: vacant” or “containing nothing.” <http://www.merriam-webster.com/dictionary/void>. The applicable ordinary meaning of “space” is “a limited extent in one, two, or three dimensions: distance, area, volume.” <http://www.merriam-webster.com/dictionary/space>. Pursuant to the broadest reasonable interpretation, this limitation

means providing a limited volume behind the face plate and above the plane defined by the portion of the golf club head where it rests on the ground in the playing position that is vacant.

3. “Applying a virtual X, Y, Z orthonormal coordinate system...”

Independent claims 1 and 11 of the '660 patent each recite the step of:

(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion.

('660 patent, col. 7, lines 48-59 & col. 8, line 58 – col. 9, line 2.)

The relationship between the X, Y, Z orthonormal coordinate system and the golf club head is indefinite because the claim limitations are unclear how the club head relates to the coordinate system. In particular, it is unclear if the main body of the golf club head (excluding the hosel) is required to be contained entirely within and touching each of the three planes formed by the X, Y, and Z axes at the origin of the coordinate system. It is also unclear how the club head is intended to be oriented in the coordinate system relative to those three planes. Although the examples in the '660 patent seem straightforward, with the golf club heads oriented in which appear to be normal address position, the actual claim limitations are anything but clear.

The claims also recite that “said sole portion is *partially congruent* with a bottom-most xy plane” of the X, Y, Z orthonormal coordinate system. ('660 patent, col. 7, lines 49-51 & col. 8, lines 59-61, emphasis added.) The applicable ordinary meaning of “congruent” is “superposable so as to be coincident throughout.” <http://www.merriam-webster.com/dictionary/congruent>. This limitation thus requires the sole portion of the golf club to be substantially coincident throughout a bottom most XY plane. This does not present any issues in the '660 patent embodiments because the soles are perfectly flat and are shown completely coincident with the XY-plane (e.g., Figs. 7 & 9). It is unclear, however, how a typical golf club having a curved sole (see, e.g., Vincent, Figs. 1-25) is supposed to be oriented relative to the XY-plane if it is not possible for a curved sole to be coincident throughout a plane.

For another thing, the claims recite that “said face plate *intersects* a forward-most XZ plane” of the X, Y, Z orthonormal coordinate system, and “a heel and hosel side of said club *intersects* a YZ plane thereof substantially at an origin of said coordinate system.” (’660 patent, col. 7, lines 51-54 & col. 8, lines 61-64, emphasis added.) The applicable ordinary meaning of “intersect” is “to meet and cross at a point.” <http://www.merriam-webster.com/dictionary/intersect>. This limitation thus requires the face plate of the golf club to meet and cross the XZ-plane, and the heel and hosel side of the golf club to meet and cross the YZ-plane.

Again, however, the claims do not specify the orientation of the golf club to the XZ- or YZ-planes, or what portions of the face plate or the heel and hosel side cross their respective planes, or by how much. The drawing figures in the ’660 patent are not helpful in this regard. First, because almost all golf clubs have a loft (*i.e.*, the face plate is angled backward relative to the sole), the face plate generally will be angled relative to the XZ-plane. In the disclosed embodiments of the ’660 patent, none of the drawing figures show the relationship between the angled face plate and the normal XZ-plane.

Second, Figs. 7 & 9 of the ’660 patent show the heel essentially tangent to the YZ-plane, with the hosel extending beyond the YZ-plane. However, none of the drawing figures show the heel crossing (*i.e.*, intersecting) the YZ-plane, and although the hosel extends beyond the XZ-plane, the hosel never actually intersects that plane because it is above the entire coordinate system as depicted in the drawing figures.

In light of the uncertainties created by the claim language, Requester submits that step (b) of claims 1 and 11 can be met by various orientations of a club head in the coordinate system. In fact, there may be a limitless number of club head orientations that satisfy this step, which, in turn, may affect the determination of the coordinate positions of any weighting means and whether they satisfy the weighting means coordinate position limitations in the claims.

Because these indefiniteness concerns cannot be addressed in a reexamination proceeding, Requestor will apply an X, Y, Z orthonormal coordinate system to the prior art using the examples in the ’660 patent (Figs. 2 & 6-12) as a guide, *i.e.*, with the golf club heads oriented approximately in the normal address position. This approach is based on the principles that (i) the claims should be interpreted, if at all possible, to cover one or more of the disclosed

embodiments, *Johns Hopkins Univ. v. CellPro, Inc.*, 152 F.3d 1342, 1355, 47 USPQ.2d 1705, 1714 (Fed. Cir. 1998) (“patent claim should be construed to encompass at least one disclosed embodiment in the written description portion of the patent specification”), and (ii) all that Requester needs to show is that the prior art anticipates or renders obvious subject matter falling within the scope of the claims, *In re Slayter*, 276 F.2d 408, 411, 125 USPQ 345, 347 (CCPA 1960) (“A generic claim cannot be allowed to an applicant if the prior art discloses a species falling within the claimed genus.”); *see also Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 971, 1880 USPQ.2d 1869, 1878 (Fed. Cir. 2001) (noting that a “genus claim limitation is anticipated by, and therefore not patentably distinct from, a[] ... species claim”).

4. “Weighting means”

Claims 1-6, 9, 11, 12, 14 and 16-19 each recite the claim phrase “weighting means.” “Weighting means” is a section 112(6) limitation whose specified function is “weighting” or “providing weight at a location in the golf club head.” Nothing in the claims specifies whether the “weighting means” are fixed or movable/replaceable, or whether they are separate from or integrally formed with the golf club. The corresponding structure described in the specification includes both separate weights and weights that are integrally formed with the golf club. The '660 patent appears to describe use of separate weights in conjunction with Figs. 14-20, but the specification also states that “many of the above functions of the weighting elements may be achieved thru variation in weight and dimension of sole plate 106 (see FIG. 1).” ('660 patent, col. 7, lines 25-27.) This is confirmed by the recitation in dependent claims 3, 4 and 6 that “said weighting means comprises golfer-replaceable elements,” which implies that independent claim 1 is not limited to golfer-replaceable weighting means, but may include fixed or permanent weights (*e.g.*, thicker walls).

If “weighting means” is not interpreted as a means clause limitation, Requester submits that this has no effect on claim scope because the claim language is sufficiently broad to cover any weights – separate or integral, fixed or movable/replaceable – again taking into account claim differentiation with dependent claims 3, 4 and 6.

5. Claimed coordinates of the “weighting means”

The weighting strategies in independent claims 1 and 11, and dependent claims 2 and 12, each require weights to be provided within the void space between or at specified high

and low coordinates of an X, Y, Z orthonormal coordinate system. For example, step (c)(i) of claim 1 recites a weighting strategy that requires providing weighting means in a range “between a low Y, low Z coordinate ... to a high Y, high Z coordinate” ('660 patent, col. 7, line 66 – col. 8, line 2.) Steps (c)(ii)-(iv) of claim 1, steps (c) and (d) of claim 11, and steps (e)(i) and (e)(iii) of claim 12 contain similar range limitations.

Step (c)(v) of claim 2 and step (e)(ii) of claim 12, on the other hand, recite weights to be provided *not* in a range, but at specified high *or* low coordinates. For example, step (c)(v) of claim 2 recites providing weighting means “at a high Y, high Z coordinate ... or at a low Y, low Z coordinate” (*Id.*, col. 8, lines 20-23.)

Neither the specification nor the claims of the '660 patent make clear what constitutes “high” and “low.” In all of the patent embodiments, the X, Y, Z orthonormal coordinate system is divided into thirds along each axis, creating a 3x3x3 matrix of 27 cells. (*See* Figs. 2-13 & 23-24.) In the specification of the '660 patent, the applicant states,

The present inventive method reflects my discovery that many more options for positioning of the CG and distribution of weight or weights within the head of a golf club, whether that club comprises an iron, a wood, or a hybrid thereof, in positioning, behind the club face, selectable high density weighting elements at coordinates of an orthonormal matrix up to 27 *potential locations in a void space*, to thus compensate for physiologic imperfections in one or more characteristic of the swing of a golfer.

('660 patent, col. 1, line 64 – col. 2, line 5, emphasis added.) However, the '660 patent claims contain no explicit requirement that the coordinate system have a 3x3x3 configuration. At most, claim 7 of the '660 patent, which depends from claim 1, refers to Y2, Y3 and Z2 coordinate positions without specifically defining them, as though it is understood that the coordinate system of claim 1 is a 3x3x3 matrix.

Additionally, during prosecution, the applicant equated “low” and “high” with the first and third cells of a 3x3x3 coordinate system, respectively. Specifically, in remarks related to application claim 37, which became claim 11 and has similar “low” and “high” coordinate references, the applicant stated that “[c]orrection of ballooning only requires adjustability in a line at a medium X-position between a high Y, high Z coordinate to a low Y, low Z coordinate. *See* Figs. 5 and 13.” (4/27/06 Amendment, p. 15.) In the specification of the '660 patent, Fig. 13 associates “MAX. BALOONING” [sic] with the position “(X2, Y1, Z1)” and “MIN.

BALLOONING” [sic] with the position “(X2, Y3, Z3).” Thus, the prosecution history makes clear that “medium X-position” refers to X2, “high Y, high Z coordinate” refers to Y3, Z3, and “low Y, low Z coordinate” refers to Y1, Z1. Accordingly, Requester applies that interpretation here.

The specification also fails to make clear whether a claim requirement for a weighting means having a specified coordinate, *e.g.*, a low Z (Z1) coordinate, is satisfied by a weight that spans multiple coordinates including the specified one, *e.g.*, a low to high Z (Z1-Z3) coordinate. Nothing in the claim precludes this, and dependent claim 7 confirms that it is satisfied by a weight that spans multiple coordinates. In this regard, claim 7 provides that step (c)(ii) of claim 1 can be satisfied “by securing a strip-like weighting element over said void space at about a (Y2-Y3, Z2) position” (’660 patent, col. 8, lines 35-37.) Step (c)(ii) of claim 1 requires a weighting means “between a high Y, high Z coordinate ... to a low Y, low Z coordinate,” or between Y3, Z3 position to a Y1, Z1 position. (*Id.*, col. 8, lines 3-6.) It is thus plain from claim 7 that a weight having a Y2-Y3, Z2 position qualifies as a Y2-Z2 position in satisfaction of step (c)(ii) of claim 1.

Lastly, it is clear that the weight location ranges specified in claims 1, 11 and 12 are satisfied by providing a weighting means in at least one position within the specified range along an axis; in other words, the claims contain no requirement of a capability of providing or moving a weighting means over the entirety of the range.² What this means is that it is unnecessary to resolve what “low” and “high” mean to the extent a golf club head (*e.g.*, the prior art) has a weighting means somewhere along the specified axis between the lowest and highest possible locations because this will satisfy such limitations.

6. “Selectably employing two of the following club weighting strategies ...”

Step (c) of claim 1 recites the step of

(c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a

² To the extent that the ’660 patent supports the entire ranges over the three axes, X, Y and Z, it does so by disclosing different embodiments with weights in various locations. The ’660 patent does not disclose any individual embodiment in which weights can be provided at, or moved to, any location in the club head over the entire range, from lowest to highest, along all three axes.

selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:

('660 patent, col. 7, lines 60-65.) As the strategies that follow in steps (c)(i)-(iv) make clear, “weighting strategies” refers to the selection of locations on the golf club head for providing (adding) weighting means.

Nothing in claim 1 limits the weighting strategies as to when (*e.g.*, during design, manufacture, or use) or by whom (*e.g.*, designer, manufacturer, or user) they are selected or implemented.

Also, nothing in claim 1 precludes the use of more than two weighting strategies. In fact, dependent claim 8 confirms that three strategies may be used by reciting that the method of selectably employing two club weighting strategies in claim 1 may comprise “employing three of said strategies.” ('660 patent, col. 8, lines 44-45.) If independent claim 1 were limited to two, *and only two*, weighting strategies, it could not properly be broadened by a dependent claim to encompass more than two strategies. *See* 35 U.S.C. § 112, fourth paragraph (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”); *Pfizer, Inc. v. Ranbaxy Laboratories Ltd.*, 457 F.3d 1284, 1291-92, 79 USPQ.2d 1583, 1589-90 (Fed. Cir. 2006) (holding dependent claim invalid for failure to comply section 112 (¶ 4) because it did not narrow the scope of the claim from which it depended).

Nothing in claim 1 further precludes using a single weighting means to implement multiple strategies. To the contrary, dependent claim 10 confirms that a single weighting means can be used for multiple weighting strategies by reciting that in the method of claim 1, “a weighting means of a first selected strategy may be integral with that of a second selected strategy.” ('660 patent, col. 8, lines 51-53.) As the applicant explained in the prosecution history, such a single weighting means may be large enough to span multiple Y coordinates (*e.g.*, '660 patent, Fig. 19) so that it also satisfies claim 1's requirement that “a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy.” (*See* 4/27/06 Amendment, pp. 14-15.)

It is unclear, though, how the requirement that “a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy” applies if the

weighting means spans multiple coordinates, e.g., Y1-Y2 or Z1-Z3. Requester submits that the broadest reasonable interpretation requires selection of the coordinate from the multiple coordinates spanned by the weighting means that is used to satisfy the selected strategy (assuming that the selected strategy specifies a Y coordinate). Thus, if the strategy is to place a weighting means at a medium Y, medium Z coordinate, and the weighting means has a Y2-Y3, Z2 coordinate, the selected value of Y would be Y2 because it is the Y coordinate selected for the strategy. In support, Requester notes that dependent claim 7 makes clear that a weight having a Y2-Y3, Z2 position qualifies as a Y2-Z2 position in satisfaction of step (c)(ii) of claim 1. See section III.C.5, *supra*, p. 11. If the selected strategy does not specify a Y coordinate, then either the requirement is inapplicable or any Y coordinate may be selected.

Finally, the requirement of step (c) of claim 1 that “at least one weighting means ... is not contiguous to any part of said face plate ...” (’660 patent, col. 7, lines 61-63), simply means that at least one weight is not in actual contact with the face plate, in accordance with the ordinary definition of “contiguous.”³

7. “At least one weighting means thereof is not contiguous to any part of said face plate”

Independent claim 1 recites the limitation that “at least one weighting means thereof is not contiguous to any part of said face plate ...” (’660 patent, col. 7, lines 61-63.). The ordinary meaning of “contiguous” is “being in actual contact: touching along a boundary or at a point.” <http://www.merriam-webster.com/dictionary/contiguous>. Thus, this limitation of claim 1 means that at least one weight means or weight is not in actual contact with the face plate.

8. “To modify backspin”; “to modify ball penetration”; “to modify ball trajectory”; “to compensate for ball hook or slice”

Claims 1, 2, 11 and 12 recite weighting strategies that include the following functional language: (1) “to modify backspin” (claim 1, step (c)(i); claim 12, step (e)(i)); (2) “to modify ball penetration” (claim 1, step (c)(ii); claim 12, step (e)(ii)); (3) “to modify ball trajectory” (claim 1, step (c)(iii); claim 12, step (e)(iii)); (4) “to compensate for ball hook or

³ “Being in actual contact: touching along a boundary or at a point.” <http://www.merriam-webster.com/dictionary/contiguous>.

slice” (claim 1, step (c)(iv); claim 11, step (d)); and (5) “to minimize (or maximize) (said ballooning” (claim 2, step (c)(v); claim 11, step (c)). This functional language merely describes the intended result of placing a “weighting means” at the coordinates specified in the limitation.

In principle, if the location of the CG of the golf club head relative to the CG of the golf ball on impact is changed – that is, if the club head’s CG is moved up or down, forward or back, and/or left or right – certain changes in ball flight characteristics naturally occur according to the laws of nature. Simple mechanics dictate the result on ball flight characteristics that follow from these changes in the CG of the club head. This functional language in the claims thus simply describes the natural result of placing weighting means at the claimed location(s) and, therefore, is not a claim limitation. *Bristol-Myers Squibb v. Ben Venue Labs.*, 246 F.3d 1368, 1375, 58 USPQ.2d 1508, 1513 (Fed. Cir. 2001) (holding that a statement of intended result is not a claim limitation); *Syntex (U.S.A.) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1378, 74 USPQ.2d 1823, 1828 (Fed. Cir. 2005) (the term “in a stabilizing amount” simply describes the intended result of using the weight to volume ratios recited in the claims). As the court stated in *Bristol-Myers Squibb*, in holding that the terms “for reducing hematologic toxicity” and “an antineoplastically effective amount” were not claim limitations,

The express dosage amounts are material claim limitations; the statement of the intended result of administering those amounts does not change those amounts or otherwise limit the claim.

246 F.3d at 1375, 58 USPQ.2d at 1513.

Regardless, whatever is true of the claimed invention with respect to the placement of weighting means is also inherently true of the prior art. In other words, to the extent that placing weighting means at the claimed location(s) results in certain ball flight characteristics, the prior art inherently anticipates to the extent it teaches placement of weighting means at the same location(s), even if the prior art does not explicitly recognize or explain the resulting ball flight characteristics. As the Federal Circuit stated in *Atlas Powder Co. v. Ireco, Inc.*, 190 F.3d 1342, 1348-49, 51 USPQ.2d 1943, 1947 (Fed. Cir. 1999):

Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates. Inherency is not necessarily coterminous with the knowledge of those of ordinary skill in the art. Artisans of ordinary skill may not recognize the inherent characteristics or functioning of the prior art. *However, the discovery of a*

previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer.

(Citations omitted; emphasis added).

9. “The method as recited in claim 1, in which said selectable club weighting strategies further include the step of...(v)...”

Claim 2 depends from claim 1 and purports to add step (v) as another selectable club weighting strategy to the existing steps (c)(i)-(iv) of claim 1. In other words, claim 2 attempts to *broaden* claim 1 by adding a fifth selectable weighting strategy option to the existing four weighting strategy options, from which two must be employed in the golf club head. That is, rather than narrowing the weighting strategy choices of claim 1, claim 2 purports to expand those choices. This is both improper and ineffective as a matter of law.

Pursuant to 35 U.S.C. § 112, fourth paragraph,

[A] claim written in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

(Emphasis added.)

Since claim 2 fails to further limit or narrow claim 1, Requester submits that it is invalid for failing to comply with section 112 (¶ 4). *Pfizer, Inc. v. Ranbaxy Laboratories Ltd.*, *supra*, 457 F.3d at 1291-92, 79 USPQ.2d at 1589-90. However, Taylor Made is mindful that by statute, 35 U.S.C. § 311, reexamination requests must be based only on prior art patents or printed publications. Other matters such as compliance with 35 U.S.C. § 112 will neither be considered nor resolved in reexamination (except with respect to subject matter added or deleted in the reexamination proceeding).

In this case, though, the section 112 issue also directly affects claim interpretation and, therefore, the prior art invalidity issues. This is because, section 112 (¶ 4) mandates that claim 2 “shall be construed to incorporate by reference all the limitations of the claim to which it refers,” *viz.*, claim 1. Thus, claim 2 incorporates claim 1’s limitation of “(c) selectably employing two of the following [four] club weighting strategies to said club,” as set forth in

steps (c)(i)-(iv). Because claim 2's addition of another selectable weighting strategy cannot undo this incorporation of claim 1's limitation into claim 2, Requester submits that the broadest reasonable of claim 2 is that it recites five options (c)(i)-(v), but is only satisfied by selecting two of the four options (c)(i)-(iv) of claim 1. In other words, the fifth option (c)(v) is ineffective, meaning that as a practical matter claim 2 is merely duplicative of claim 1.

Accordingly, for purposes of this reexamination, Requester will interpret claim 2 in the first instance as duplicative of claim 1. For completeness, however, Requester also will show that claim 2 is invalid in view of the prior art even if it is interpreted to add a fifth selectable weighting strategy option to step (c) of claim 1.

10. “Weighting means not contiguous with any inner surface of said void space”

Dependent claim 9, which depends from claim 1, recites the additional limitation that “at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.” ('660 patent, col. 8, lines 47-49.)

The “void space” is behind the face plate and above the sole portion, so it is clear that the inner surfaces of the void space include the inner surfaces of the face plate and the sole portion. At the same time, the claims do not preclude the club head from having sides, a rear and/or a crown portion (*e.g.*, a closed shell). To the extent that the club head has these other portions, the inner surfaces of the void space also include their inner surfaces. This follows from the ordinary meaning of “void space” – a limited volume that is vacant, not occupied, or contains nothing – since the void space by definition would be bounded by the inner surfaces of those other portions of the club head. That is, since the void space would terminate at the sides, rear and crown portion, the inner surfaces of the void space would include the inner surfaces of the sides, rear and crown portion just as much as they include the inner surfaces of the face plate and the sole portion. Thus, “any inner surface of said void space” means any inner surface of the structures that bound the void space, including but not limited to any inner surface of the face plate and the sole portion.

As discussed in section III.C.7, *supra*, p. 13, the ordinary meaning of the term “contiguous” requires actual contact. Neither the specification nor the prosecution history of the '660 patent sheds any light on how claim 9's requirement of a “weighting means not contiguous

with any inner surface of said void space” applies to any of the disclosed embodiments. In Figs. 14-17, it is unclear if weights E-I are contiguous with one or more inner surfaces of the void space, or instead are spaced (if only slightly) from the inner surface by some supporting structure that is not shown or described. The specification suggests that players can move weights E, F, G and H (*e.g.*, '660 patent, col. 6, lines 5-9, 19-21 & 31-36), but does not disclose how the weights are mounted or what allows players to move them. By adding new subject matter in a continuation-in-part application, serial No. 11/588,992, which issued as U.S. Patent No. 7,854,667 (“the '667 patent”), the applicant showed how weight F in Figs. 14-14B could be mounted to allow movement by players, including a support structure in the form of a threaded bolt 121 that spaces weight F from the inner surfaces of the void space in Figs. 14A & 14B. (*See* '667 patent, col. 6, line 59 – col. 7, line 21; Figs. 14, 14A & 14B.) Although threaded bolt 121 clearly has weight and is moved along tracks 118, 119, 119A and 119B together with weight F (*see* Figs. 14A & 14B), the applicant apparently has chosen not to define or include the threaded bolt as part of weight F.

Additionally, Figs. 18-20 of the '660 patent disclose clip-on type weighting elements J-L that appear to clip onto the rear or top of the club head. (*See* '660 patent, col. 7, lines 11-24; Figs. 18-20.) As shown, these weighting elements apparently do not contact the inner surfaces of the void space, but they do appear to contact the edges of those inner surfaces along the rear and/or sides of the club head. Indeed, this is confirmed by Fig. 18A that was added by the applicant in the continuation-in-part application that issued as the '667 patent. It can be seen in Fig. 18A that weight J appears to touch the boundary or edges of the void space 102, but clearly does not touch the void space’s inner surfaces (*i.e.*, the inner surfaces of the face plate, sole portion or sides of the club head 100).

Based on the foregoing, Requester submits that the broadest reasonable interpretation of “weighting means not contiguous with any inner surface of said void space” includes (i) a weight that is spaced from the inner surfaces of the void space by a supporting structure, which may, in fact, be a separate weight itself, and (ii) a weight that may be in contact with an edge or boundary of an inner surface of the void space, but that is not in contact with the actual inner surface itself.

11. “A weighting means of a first selected strategy may be integral with that of a second selected strategy”

Claim 10 depends from claim 1 and recites the additional limitation that “a weighting means of a first selected strategy may be integral with that of a second selected strategy.” (’660 patent, col. 8, lines 51-53.) Requester submits that “may be” renders the claim indefinite under 35 U.S.C. § 112, second paragraph, but for purposes of reexamination Requester interprets “may be” as “is”.

As discussed in section III.C.6, *supra*, pp. 12-13, the applicant explained in the prosecution history that a single weighting means may be large enough to span multiple Y coordinates (e.g., ’660 patent, Fig. 19) so that it also satisfies claim 1’s requirement that “a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy.” (See 4/27/06 Amendment, pp. 14-15.) However, if a single weighting means does not span multiple Y coordinates, then in order to satisfy both claim 10’s requirement that the weighting means is integral for two strategies and claim 1’s requirement of different Y values, three strategies may need to be employed: two strategies using the same weight so that they are “integral,” but since those strategies have the same Y value, a third strategy using another weight to satisfy the requirement for a different Y value.

12. “Selectably employing at least one of the following club weighting strategies to said club, in which a selected value of X, Y or Z does not include the value of Y used in Step (c)”

Claim 12, which depends from claim 11, recites the additional limitation of “(e) selectably employing at least one of the following club weighting strategies to said club, in which a selected value of X, Y or Z does not include the value of Y used in Step (c) [of claim 11].” (’660 patent, col. 9, lines 12-15.) This limitation raises two issues.

First, it is worded in the disjunctive. Therefore, it is satisfied if any selected value of X, Y *or* Z does not include the value of Y for the weighting means that satisfies step (c) of claim 11.

Second, it is unclear how “a selected value of X, Y or Z” and “the value of Y used in Step (c)” apply if the weighting means spans multiple coordinates, e.g., Y1-Y2 or Z1-Z3. Consistent with section III.C.6, *supra*, pp. 12-13, Requester submits that the broadest reasonable

interpretation of “a selected value of X, Y or Z” is that it requires selection of the coordinate from the multiple coordinates spanned by the weighting means that is used to satisfy the selected strategy. Thus, if the strategy is to place a weighting means at a medium Y, medium Z coordinate, and the weighting means has a Y2-Y3, Z2 coordinate, the selected value of Y for comparison with “the value of Y used in Step (c)” would be Y2 because it is the Y coordinate selected to satisfy the strategy. If the selected strategy does not specify a Y coordinate, then either the requirement is inapplicable or any Y coordinate may be selected. Similarly, Requester submits that “the value of Y used in Step (c)” must be the Y coordinate that satisfies step (c) of claim 11.

D. The Priority Date Of The '660 patent Claims

The application for the '660 patent was a continuation-in-part of application Ser. No. 10/383,532 (“the '532 application”), entitled “Multi-Purpose Golf Club,” filed March 10, 2003, now abandoned, which was a continuation⁴ of application Ser. No. 09/849,522, now U.S. Patent No. 6,530,848 (“the '848 patent”), which was a utility conversion of Provisional Patent application No. 60/205/250 (“the '250 provisional application”), filed May 19, 2000. The '532 application and the '250 provisional application have virtually identical specifications to that of the '848 patent. Therefore, for convenience, Requester will simply reference the disclosure of the '848 patent in its discussion of priority.

A claim of priority to an earlier application is governed by 35 U.S.C. § 120, which provides, in pertinent part, that

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States, . . . which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or

⁴ The face page of the '660 patent incorrectly identifies application Ser. No. 10/383,532 as a continuation-in-part of the '848 patent application. As set forth on pages 2-3 of the PRELIMINARY AMENDMENT PURSUANT TO 37 CFR 1.115 AND SUBMISSION OF UPDATED DECLARATION AND SUPPLEMENTAL ADS, dated February 1, 2005 submitted in the prosecution of the application for the '660 patent, the '532 application is a continuation of the '848 patent.

is amended to contain a specific reference to the earlier filed application.

(*Emphasis added*). As the Federal Circuit explained in *In re Chu*,

a patent application is entitled to the benefit of the filing date of an earlier filed application [under 35 U.S.C. § 120] *only if* the disclosure of the earlier application provides support for the claims of the later application, as required by 35 U.S.C. § 112.

66 F.3d 292, 297, 36 USPQ.2d 1089, 1093 (Fed. Cir. 1995) (*emphasis added*). *See also Mendenhall v. Cedarrapids Inc.*, 5 F.3d 1557, 1566, 28 USPQ.2d 1081, 1089-90 (Fed. Cir. 1993) (“A patentee cannot obtain the benefit of the filing date of an earlier application where the claims in issue could not have been made in the earlier application.”).

Typically, a continuation-in-part application contains subject matter from a prior application and additional matter not disclosed in the prior application. *Waldemar Link, GmbH & Co. v. Osteonics Corp.*, 32 F.3d 556, 558, 31 USPQ.2d 1855, 1857 (Fed. Cir. 1994). A continuation-in-part application is *not* entitled to the priority date of an earlier patent application simply because the continuation-in-part application makes reference to and attempts to claim priority to the earlier patent application and the priority claim is printed on the face of the patent. Subject matter that arises for the first time in the continuation-in-part application does not receive the benefit of the filing date of the prior application. *Id.* Rather, “[c]laims containing any matter introduced in the [continuation-in-part] are accorded the filing date of the [continuation-in-part] application. However, matter disclosed in the parent application is entitled to the benefit of the filing date of the parent application.” *Id.*

Accordingly, the decision on the proper priority date for subject matter claimed in the CIP application depends on when the subject matter first appeared in the patent disclosures. *Augustine Medical, Inc. v. Gaymar Industries*, 181 F.3d 1291, 1302, 50 USPQ.2d 1900, 1909 (Fed. Cir. 1999). “To decide this question, a court must examine whether the ‘disclosure of the application relied upon reasonably convey[s] to the artisan that the inventor had possession at that time of the later claimed subject matter.’”

None of the claims of the '660 patent for which reexamination is requested are supported by the disclosure of the '848 patent. Therefore, none of the claims are entitled to the benefit of an earlier priority date under Section 120.

Independent claim 1 requires the step of “(c) selectably employing two of the following club weighting strategies to said club ... , the strategies comprising”: “(i) providing within said void space weighting means between a low Y, low Z coordinate ... to a high Y, high Z coordinate”; “(ii) providing within said void space weighting mean between a high Y, high Z coordinate ... to a low Y, low Z coordinate”; “(iii) modifying weighting means substantially within said void space between a low Z-coordinate ... to a high Z-coordinate”; and “(iv) providing weighting means substantially within said void space at a low X-coordinate ... to a high X-coordinate.” Claims 2-6, 8 and 9 depend from claim 1 and thus contain these same limitations. In addition, claim 2 recites the additional weighting strategy of step (c)(v) of “providing weighting means within said void space at a high Y, high Z coordinate ... or at a low Y, low Z coordinate.”

Independent claim 11 requires the step of “(c) providing weighting means substantially within said void space between a high Y, high Z coordinate to ... a low Y, low Z coordinate ... ”; and “(d) providing weighting means substantially within said void space between a low X-coordinate ... to a high X coordinate” Claims 12-14 and 16-19 depend from claim 11 and thus contain these same limitations. In addition, claim 12 requires the additional step of “(e) selectably employing at least one of the following club weighting strategies to said club,” the weighting strategies including: “(i) ... providing within said void space, weighting means between a low Y, low Z coordinate ... to a high Y, high Z coordinate ... ; or (ii) ... providing within said void space weighting means at a high Y, high Z coordinate ... or at a low Y, low Z coordinate ... ; or (iii) ... providing weighting means substantially within said void space between a low Z-coordinate ... to a high Z-coordinate”

Accordingly, claims 1, 11 and 12 each recite *a range of coordinates* for the weighting means, and claims 2 and 12 (step (c)(ii)) additionally recite weighting means at the extremes of a range. The ranges on all three axes – X, Y and Z – are low to high in a 3x3x3 matrix. The '848 patent does not provide support for claims 1, 2, 11 or 12 of the '660 patent for at least the reason that the '848 patent does not disclose weights over the entirety, or at both extremes, of the claimed range of coordinates on each axis. *See Pordy v. Land O'Lakes, Inc.*, 97 Fed. Appx. 921, 929 (Fed. Cir. 2004) (holding that the claims of a CIP patent were not entitled to the earlier filing date of the original parent application because the parent application failed to teach or suggest the entirety of the ranges claimed in the CIP patent).

The disclosure of the '848 patent makes clear that it is *solely* concerned with modifying the weight of a golf club head *by modification of its sole plate*. As stated in the Summary of the Invention of the '848 patent:

A golf club head made of wooden, plastic, metal, and other suitable materials is modified to decrease its weight by hollowing out the club head *and providing replaceable, weighted sole plate(s)*. The *sole plate* may be uniformly or variably weighted from club hosel end to toe end, and may include a weight of uniform or non-uniform weight distribution, which is mounted or made a part of the interior of the sole plate, and the weight is placed up against the interior of the club face.

Accordingly, it is a principal object of the invention to provide a wooden, plastic or metal golf club having a weight modified club head, provided by *an interchangeable sole plate*.

....

It is a further object of the invention to provide a golf club having a club head with a hollowed portion made during production according to the golfer's preference, and further providing *a modified sole plate*, with or without and additional, integral or added weight, fitted in behind the face plate of the club.

('848 patent, col. 2, lines 38-60.)

Although the '848 patent lacks any disclosure of a coordinate system applied to the club head, Requester recognizes that a virtual X, Y, Z orthonormal coordinate system as defined in the claims could be applied to it. Regardless, consistent with the Summary of the Invention, in all of the embodiments in the '848 patent a weight is *only* added to the golf club head via a modified sole plate. (See '848 patent, col. 2, lines 38-60; Fig. 4.) Thus, the location of the weight is limited to a low Z (Z1) coordinate. As described in the Summary of the Invention, the '848 discloses various embodiments for weighting the sole plate, including weighting the sole plate from the club's hosel end (X1) to the toe end (X3). The '848 patent also describes weighting the sole plate against the interior of the face of the club head, so it discloses providing weight at least at a low Y (Y1) coordinate (*id.*, col. 2, lines 41-47), if not over the entire range low Y to high Y. What the '848 patent most clearly and indisputably fails to disclose is providing weights anywhere in an X-Y plane (a) over the entirety of the Z axis, from a low Z to high Z coordinate, as recited in steps (c)(i)-(iii) of claim 1, step (c) of claim 11, and steps (e)(i)

and (iii) of claim 12, or (b) at the extremes of the Z axis, low Z and high Z, as recited in step (c)(v) of claim 2 and step (e)(ii) of claim 12.

The insufficiency of the disclosure of the '848 patent specification to support the '660 patent claims stands in stark contrast to the disclosure of the '660 patent itself. The embodiments depicted in Figs. 2-20 of the '660 patent provide clear support for the requirement of providing weighting means over the entire range of coordinates of the club head, low to high, along all three axes, X, Y and Z. For example, Fig. 7 shows weight B at an X2, Y1, Z1 coordinate, Fig. 16 shows weight H at a Y2, Z2 coordinate, Fig. 12 shows a weight at an X3, Y3, Z3 coordinate, and Fig. 11 shows a weight at a X1 Y3, Z2 coordinate. *None* of the disclosure of the '660 patent that supports its claims is found in the '848 patent.

Therefore, independent claims 1 and 11, and their respective dependent claims at issue (including claims 2 and 12), manifestly are *not* entitled to the benefit of the filing date of the '848 patent. *Waldemar Link*, 32 F.3d at 558, 31 USPQ.2d at 1857. These claims are only entitled to the filing date of the '660 patent—April 3, 2004.

E. Discussion of the Prior Art References Relied Upon to Demonstrate a “Reasonable Likelihood” of Prevailing on at least One Claim

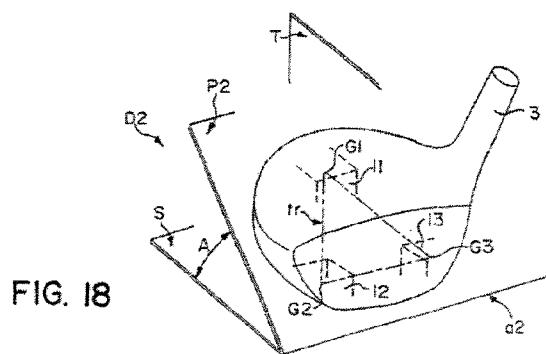
As discussed below and in more detail in section IV, including **Appendices A-E** thereto, claims 1-6, 8-14 and 16-19 of the '660 patent are invalid because they are anticipated by Parente, Hoffman, Billings, and/or Vincent, and claim 9 would have been obvious over Parente in view of Ellingham. Each reference is discussed under separate headings below.

1. Vincent

Vincent issued on September 5, 1995, more than one year before the priority date of the '660 patent. Therefore, Vincent qualifies as prior art under 35 U.S.C. § 102(b).

Vincent discloses a golf club head with weights for changing the club head's moment of inertia and center of gravity, thereby enhancing its performance. (*See, e.g., Vincent*, col. 2, lines 2-33.) The golf club head in Vincent has an empty internal cavity 9 (“void space”) behind the front wall 8 (“face plate”) and above a lower wall 6 (“sole portion”). (Vincent, col. 6, lines 17-27.)

Vincent discloses four embodiments of a golf club head having three peripheral weights 11, 12, 13. Vincent teaches that the centers of gravity of the weights form a triangle, and that the “weights are located substantially in a weight plane which is inclined with respect to the plane of the ground when the head rests on the ground.” (Vincent, col. 2, lines, 30-33.) Vincent discloses two embodiments in which the inclined weight plane extends from the upper-front to the lower-rear of the golf club head (Figs. 7-10 & 11-14), and two embodiments in which the inclined weight plane extends from the lower-front to the upper-rear of the golf club head (Figs. 15-18 & 19-22). Fig. 18 is reproduced below:



Vincent discloses that the weights 11, 12, 13 may be “separate from the head and are attached” to the golf club head in the form of screw weights. (Vincent, col. 8, lines 3-6; Fig. 25.)

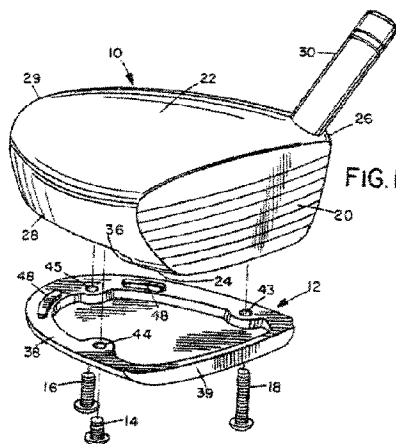
A virtual X, Y, Z orthonormal coordinate system as defined in the claims of the '660 patent can be applied to the drawing figures of the four golf club embodiments in Vincent. One possible application to Vincent, using the examples in the '660 patent (Figs. 2 & 6-12) as a guide, is shown in **Exhibit A-1**, which is annexed to **Appendix A** attached hereto. A summary of the X, Y and Z coordinate positions of Vincent's weights is set forth in **Exhibit A-2** annexed to **Appendix A**.

Vincent was not disclosed, cited or applied during prosecution of the '660 patent, and therefore was not considered by the Examiner of the '660 patent, either alone or in combination, with any of the other references discussed herein.

2. Parente

Parente issued on June 15, 1999, more than one year before the priority date of the '660 patent. Therefore, Parente qualifies as prior art under 35 U.S.C. § 102(b).

Parente discloses the use of screws 14, 16, 18 as weights. The screws are received in through bores 43, 44, 45 in the sole plate 12 and into threaded bores 40, 41, 42 in the body 10. (Parente, col. 3, lines 40-44; Figs. 1-4.) Fig. 1 of Parente is reproduced below:



Parente provides “[a] number of different sets of screws of different lengths, and thus different weights.” (*Id.*, col. 3, lines 49-50.) Parente states that “the only limitation on maximum screw length is the height of the cavity itself” (*id.*, col. 4, lines 62-63), thus teaching use of a longer screw weight, up to the maximum permissible length. The screws are used to adjust weighting in the club head and thereby alter the center of gravity and performance of the golf club. (*Id.*, col. 1, lines 28-67; col. 4, lines 8-33.) “The screws can be changed quickly and easily as desired to adjust head weight and weight distribution, allowing a head to be finely tuned to a particular golfer’s requirements.” (Parente, col. 2, lines 37-41.)

In one example, Parente discloses providing seven different sets of screws. (*Id.*, col. 3, lines 53-65.) “Any screw from any of the seven sets may be used at any of the three positions, providing a very large number of possible different weight distributions, and a large degree of adjustability in the same club head, while maintaining an optimum total weight. By using different screw weights at the different positions, the position of the center of gravity as well as the size of the sweet spot, and the overall ‘feel’ and playing characteristics of the club

can be readily adjusted.” (*Id.*, col. 4, lines 16-24.) Parente further discloses that more than three screws can be used in the sole “for an even greater range of weight adjustment.” (*Id.*, col. 4, line 64 – col. 5, line 2.) Parente teaches that “the screws may be changed readily until the optimum weighting for a particular golfer is achieved.” (Parente, col. 2, lines 7-8.) Thus, it would be understood that any number of weighting strategies may be employed in Parente’s club head.

A virtual X, Y, Z orthonormal coordinate system as defined in the claims of the '660 patent can be applied to the golf club in Parente. One possible application to Parente, using the examples in the '660 patent (Figs. 2 & 6-12) as a guide, is shown in **Exhibit B-1**, which is annexed to **Appendix B** attached hereto. A summary of the X, Y and Z coordinate positions of Parente’s weights is set forth in **Exhibit B-2** annexed to **Appendix B**.

Parente was not disclosed, cited or applied during prosecution of the '660 patent, and therefore was not considered by the Examiner of the '660 patent, either alone or in combination, with any of the other references discussed herein.

3. Ellingham

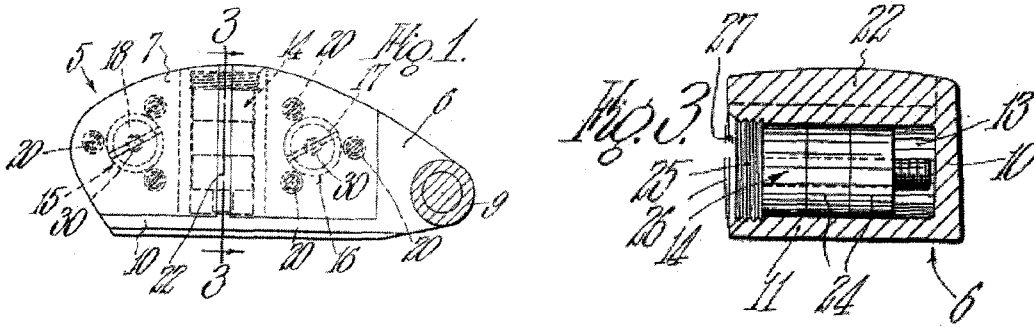
Ellingham issued on December 9, 1924, more than one year before the priority date of the '660 patent. Therefore, Ellingham qualifies as prior art under 35 U.S.C. § 102(b).

Ellingham discloses a golf club head 5 comprising a metal frame 6 and two wooden blocks 7. (Ellingham, page 1, lines 49-61.) The club head may be used for driving as well as for putting. (*Id.*, page 1, lines 90-92.) The sole 11 of the frame 6 is provided with threaded apertures 15, 16 in the toe and heel portions thereof, and the wooden blocks 7 have bores that are aligned with the threaded apertures 15, 16 and adapted to receive weight units 17, 18. (*Id.*, page 1, lines 92-102; Fig. 4.) Screws 28 “have enlarged shank portions 29 that are threaded into apertures 15, 16 in the sole 11, and reduced shank portions 30 upon which are threaded one or more weights or collars 31 which, together with the screws 28, constitute the weight units 17, 18.” (*Id.*, page 2, lines 37-46; Fig. 4.) The screws are provided with heads having coin slots therein to facilitate insertion and removal. (*Id.*, page 2, lines 46-49.) As stated in Ellingham:

The masses of weight represented by the collars 31 may be varied at will by varying the number of separate collars upon the screws 28. The collars 31 are interchangeable upon the two

screws 28. The above described construction and arrangement of the weight units is such that the user of the club may adjust or rearrange the weights at will to shift the center of gravity of the club to obtain the desired balance ... ”

(*Id.*, page 2, lines 52-61.) Figs. 1 and 3 are reproduced below:



Ellingham teaches that “the masses of weight represented by the collars 31 may be varied at will by varying the number of separate collars upon the screws 28” (Ellingham, col. 3, lines 52-55) and that the collars could preferably be made of Babbitt material (*id.*, col. 3, lines 30-32).

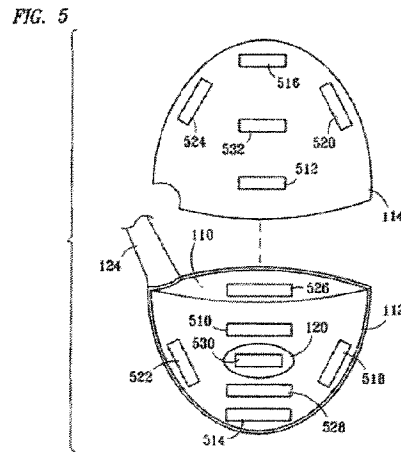
Ellingham was not disclosed, cited or applied during prosecution of the '660 patent, and therefore was not considered by the Examiner of the '660 patent, either alone or in combination, with any of the other references discussed herein.

4. Billings

The application for Billings was filed in the United States on January 10, 2002, prior to the filing date of the '660 patent. Since the application for Billings was filed by another in the United States before the filing of the application for the '660 patent, Billings qualifies as prior art under 35 U.S.C. § 102(e)(1).

Billings discloses a golf club head 100 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See, e.g., Billings, col. 2, lines 8-14.) The golf club head in Billings has an empty internal cavity 118 (“void space”) behind the face plate 110 and above a sole portion 112 for placing weighting material within the internal cavity of the club head. (*Id.*, col. 2, lines 45-49.)

A virtual X, Y, Z orthonormal coordinate system as defined in the claims of the '660 patent can be applied to the golf club in Billings. A copy of Fig. 5, which is reproduced below, does not lend itself to overlaying such a coordinate system. However, Fig. 5 considered in conjunction with Billing's specification (col. 3, line 56 – col. 4, line 42), makes clear the locations of the weights in the X, Y, Z coordinate system.



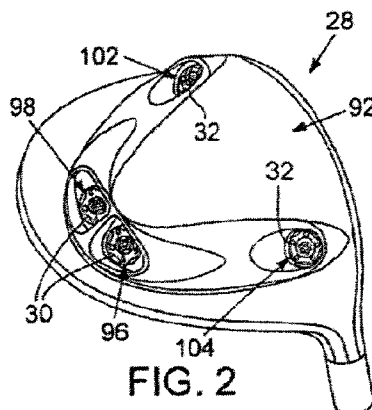
A summary of the X, Y and Z locations of Billings' weights is set forth in **Exhibit D-1** annexed to **Appendix D**.

Billings was not disclosed, cited or applied during prosecution of the '660 patent, and therefore was not considered by the Examiner of the '660 patent, either alone or in combination, with any of the other references discussed herein.

5. Hoffman

The application for Hoffman was filed in the United States on February 23, 2004, prior to the filing date of the '660 patent. Since the application for Hoffman was filed by another in the United States before the filing of the application for the '660 patent, Hoffman qualifies as prior art under 35 U.S.C. § 102(e)(1).

Hoffman discloses a golf club head 28 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See, e.g., Hoffman, col. 3, line 58 – col. 4, line 5.) Hoffman's club head 28 includes four recesses 96, 98, 102, 104 formed in the wall of the club head body 92. (Hoffman, col. 7, lines 36-40.) Each recess is positioned behind the face plate and above a sole portion of the club head. (*Id.*, Figs. 2-5.) Hoffman's "sole" includes both a curved bottom portion that rests on the ground and a skirt or sidewall portion that is above the ground. (*Id.*, Figs. 2-5.) Hoffman's recesses 96, 98, 102, 104 are all located in the skirt or sidewall portion. Fig. 2 is reproduced below:



Hoffman discloses the use of a set of weights 24 including two weight assemblies 30 of about 10 grams and two screw weights 32 of about 2 grams that are sized to be received in any of the four recesses 96, 98, 102, 104 formed in the club head 28. (Hoffman, col. 3, lines 58-66; Figs. 2-5.) “Varying placement of the weights enables the golfer to vary launch conditions in the club head, for optimum distance and accuracy. More specifically, the golfer can adjust the position of the club head's center of gravity, for greater control over the characteristics of launch conditions and, therefore, the trajectory of the golf ball.” (*Id.*, col. 3, line 66 – col. 4, line 5.) Hoffman discloses a wrench by which a golfer can attach and remove weights 24. (See, e.g., Hoffman, col. 8, lines 14-32.)

A virtual X, Y, Z orthonormal coordinate system as defined in the claims of the '660 patent can be applied to the golf club in Hoffman. One possible application to Hoffman, using the examples in the '660 patent (Figs. 2 & 6-12) as a guide, is shown in **Exhibit E-1**, which is annexed to **Appendix E** attached hereto. A summary of the X, Y and Z coordinate positions of Hoffman's weights is set forth in **Exhibit E-2** annexed to **Appendix E**.⁵

⁵ In December 2011, Patent Owner filed an action against Requester for alleged infringement of the '660 patent in the U.S. District Court for the Southern District of California, Case No. 11-cv-2974. Hoffman substantially discloses one or more of Requester's golf clubs that Patent Owner has asserted in that co-pending litigation infringes the '660 patent. Requester's position in the litigation is that, properly construed, the '660 patent does not cover its accused golf clubs and is invalid. How Patent Owner construes the claims of the '660 patent to cover Requester's golf clubs is not entirely clear to Requester. In this reexamination request, Requester presents its present understanding of the broadest reasonable interpretation of the '660 patent claims as they may apply to Hoffman, without prejudice to Requester's position in the co-pending litigation.

Hoffman was not disclosed, cited or applied during prosecution of the '660 patent, and therefore was not considered by the Examiner of the '660 patent, either alone or in combination, with any of the other references discussed herein.

IV. Detailed Explanation Under 37 C.F.R. § 1.915(b)(3)

Pursuant to 37 C.F.R. § 1.915(b)(3), a detailed explanation of the pertinence and manner of applying the prior art to every claim for which reexamination is requested is set forth as follows⁶:

1. The claim chart attached hereto as **Appendix A** demonstrates that claims 1-6, 8, 10-14 and 16-19 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Vincent.
2. The claim chart attached hereto as **Appendix B** demonstrates that claims 1-6, 8-14 and 16-19 of the '660 patent are unpatentable under 35 U.S.C. § 102(b) as anticipated by Parente.
3. The claim chart attached hereto as **Appendix C** demonstrates that claim 9 of the '660 patent is unpatentable under 35 U.S.C. § 103(a) as obvious over Parente in view of Ellingham.
4. The claim chart attached hereto as **Appendix D** demonstrates that claims 1-6, 8, 10-14 and 16-19 of the '660 patent are unpatentable under 35 U.S.C. § 102(e) as anticipated by Billings.
5. The claim chart attached hereto as **Appendix E** demonstrates that claims 1-6, 8-14 and 16-19 of the '660 patent are unpatentable under 35 U.S.C. § 102(e) as anticipated by Hoffman.

⁶ As presently advised, Requester believes that one or more claims of the '660 patent may be invalid on other grounds, including failure to comply with 35 U.S.C. § 112. However, Requester understands that compliance with 35 U.S.C. § 112 will neither be considered nor resolved in reexamination (except with respect to subject matter added or deleted in the reexamination proceeding). Accordingly, this reexamination request is without prejudice to any other defenses that Requester may assert to the '660 patent in other proceedings, including lack of compliance with 35 U.S.C. § 112.

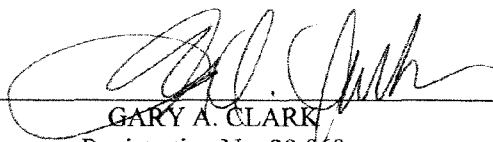
In accordance with PTO practice, this request for reexamination is based on the broadest reasonable interpretation of the claims and is without prejudice to any claim interpretation that Requester may urge or advance in litigation involving the '660 patent.

V. Conclusion

For the reasons given above, Requester respectfully requests that the Patent and Trademark Office enter an order for *inter partes* reexamination of U.S. Patent No. 7,128,660.

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

By


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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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27353	7590	09/25/2012
MELVIN K. SILVERMAN AND ASSOCS PC		
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SUITE 350		
FT. LAUDERDALE, FL 33309		

EXAMINER	
GRAHAM, MATTHEW C	

ART UNIT	PAPER NUMBER
3993	

MAIL DATE	DELIVERY MODE
09/25/2012	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Transmittal of Communication to Third Party Requester <i>Inter Partes</i> Reexamination	Control No.	Patent Under Reexamination	
	95/002,049	7128660	
	Examiner	Art Unit	
	MATTHEW C. GRAHAM	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
12275 EL CAMINO REAL, SUITE 200
SAN DIEGO, CA 92130

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

ORDER GRANTING/DENYING REQUEST FOR INTER PARTES REEXAMINATION	Control No.	Patent Under Reexamination
	95/002,049	7128660
	Examiner	Art Unit
	MATTHEW C. GRAHAM	3993

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

The request for *inter partes* reexamination has been considered. Identification of the claims, the references relied on, and the rationale supporting the determination are attached.

Attachment(s): ☐ PTO-892 ☒ PTO/SB/08 ☐ Other: _____

1. ☒ The request for *inter partes* reexamination is GRANTED.

☒ An Office action is attached with this order.

☐ An Office action will follow in due course.

2. ☐ The request for *inter partes* reexamination is DENIED.

This decision is not appealable. 35 U.S.C. 312(c). Requester may seek review of a denial by petition to the Director of the USPTO within ONE MONTH from the mailing date hereof. 37 CFR 1.927. EXTENSIONS OF TIME ONLY UNDER 37 CFR 1.183. In due course, a refund under 37 CFR 1.26(c) will be made to requester.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Order.

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ORDER

1. This is an Order granting Inter Partes reexamination. An Office Action on the merits accompanies this Order. The present request for Inter Partes Reexamination establishes a reasonable likelihood that requester will prevail with respect to claims 1-6, 8, 10-14 and 16-19 of US Patent 7,128,660 to Gillig.

2. The effective filing date is hereby established as April 3, 2004. US Patent 7,128,660 (application 10/818,899) is a continuation-in-part (CIP) of application 10/383,532 (abandoned) which is a CIP of application 09/849,522, now US Patent 6,530,848. Neither of the prior applications discloses nor claims the weighting strategies or variety of virtual axes as recited in the claims as discussed below. Accordingly, the earliest effective filing date is filing date of application 10/818,899, which is April 3, 2004.

3. The requester contends that the following patents establish a reasonable likelihood that the requester will prevail with respect to the claims:

- (1) U.S. Patent No. 5,447,309 to Vincent ("Vincent");
- (2) U.S. Patent No. 5,911,638 to Parente, et al. ("Parente");
- (3) U.S. Patent No. 1,518,316 to Ellingham ("Ellingham");
- (4) U.S. Patent No. 7,004,852 to Billings ("Billings"); and
- (5) U.S. Patent No. 7,166,040 to Hoffman, et al. ("Hoffman").

4. The requester contends that the following proposed rejections establish a reasonable likelihood that requester will prevail with respect to claims.

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1. Claims 1-6, 8, 10-14 and 16-19 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Vincent.

2. Claims 1-6, 8-14 and 16-19 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Parente.

3. Claim 9 is unpatentable under 35 U.S.C. § 103(a) as obvious over Parente in view of Ellingham.

4. Claims 1-6, 8, 10-14 and 16-19 are unpatentable under 35 U.S.C. § 102(e) as anticipated by Billings.

5. Claims 1-6, 8-14 and 16-19 are unpatentable under 35 U.S.C. § 102(e) as anticipated by Hoffman.

Claim 1 of Gilleg recites a method of enhancing performance of a golf club, the method comprising the steps of:

(a) providing a void space behind a face plate of said club and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion;

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(c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising:

(i) to modify backspin, providing within said void space weighting means between a low Y, low Z coordinate to increase backspin to a high Y, high Z coordinate to decrease backspin;

(ii) to modify ball penetration, providing within said void space weighting means between a high Y, high Z coordinate to maximize penetration to a low Y, low Z coordinate to minimize penetration;

(iii) to modify ball trajectory, modifying weighting means substantially within said void space between a low Z-coordinate to increase trajectory to a high Z-coordinate to decrease trajectory;

or (iv) to compensate for ball hook or slice, providing weighting means substantially within said void space at a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice, thereby enhancing performance of said club.

And independent claim 11 recites a method of enhancing performance of a golf club, the method comprising the steps of:

(a) providing a void space behind a face plate of said club and above a sole portion thereof;

(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which

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said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion;

(c) providing weighting means substantially within said void space between a high Y, high Z coordinate to minimize ballooning to a low Y, low Z coordinate to maximize said ballooning; and (d) providing weighting means substantially within said void space between a low X-coordinate to compensate for hook to a high X-coordinate to compensate for slice.

Key to these claims is the recitation of providing a void space in the club and employing two weighting strategies (claim 1) or providing weighting means at two locations (claim 11). It is noted that dependent claims 10 and 19 recite that the weighting means of the first strategy may be integral with the weighting means of the second strategy and that the application record indicates that two locations for the weighting means can be two locations on one weighting means.. Accordingly, only a single weighting means (weight) is need to meet the claim limitations. It is noted that the virtual axes recited are purely functional. Anything in a three-dimensional space located within an X, Y, Z coordinate system. In addition, the placement of the weight for compensation of various ball trajectories, (hook, slice, etc.) is also purely functional. Thus given their broadest reasonable interpretation, the claims recite a gulf club having

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a void space bounded by the face and sole of the club and providing a weight within this void space (and that the weight is not contiguous with the face of the club for claim 1).

A Reasonable Likelihood of Prevailing (RLP)

4. **Issue #1** Vincent in relation to claims 1-6, 8, 10-14 and 16-19.

It is agreed that there is a reasonable likelihood that the requester will prevail with respect to at least one claim in relation to Vincent as applied to claims 1-6, 8, 10-14 and 16-19.

Vincent discloses four embodiments of a golf club head having three peripheral weights 11, 12, 13. Vincent teaches that the centers of gravity of the weights form a triangle, and that the "weights are located substantially in a weight plane which is inclined with respect to the plane of the ground when the head rests on the ground." (See col. 2, lines, 30-33.) Vincent discloses two embodiments in which the inclined weight plane extends from the upper-front to the lower-rear of the golf club head (Figs. 7-10 & 11-14), and two embodiments in which the inclined weight plane extends from the lower-front to the upper-rear of the golf club head (Figs. 15-18 & 19-22). Vincent discloses that the weights 11, 12, 13 may be "separate from the head and are attached" to the golf club head in the form of screw weights. (See col. 8, lines 3-6 and Fig. 25.) At least one of these weights 11 is in a void space and not contiguous with the front face of the club head.

Accordingly, Vincent establishes a case of anticipation in regards to claims 1-6, 8, 10-14 and 16-19 as discussed in Ground #1 in the attached non-final office action.

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Issue #1 establishes a reasonable likelihood that requester will prevail with respect to claims 1-6, 8, 10-14 and 16-19 of Gillig.

5. **Issue #2** Parente in relation to claims 1-6, 8, 10-14 and 16-19.

It is agreed that there is a reasonable likelihood that the requester will prevail with respect to at least one claim in relation to Parente as applied to claims 1-6, 8, 10-14 and 16-19.

Parente discloses the use of screws 14, 16, 18 as weights in a golf club head. The screws are received in through bores 43, 44, 45 in the sole plate 12 and into threaded bores 40, 41, 42 in the body 10. (See col. 3, lines 40-44 and Figs. 1-4.) Parente provides a "number of different sets of screws of different lengths, and thus different weights." (See col. 3, lines 49-50.) Parente states that "the only limitation on maximum screw length is the height of the cavity itself" (See col. 4, lines 62-63), thus teaching use of a longer screw weight, up to the maximum permissible length. The screws are used to adjust weighting in the club head and thereby alter the center of gravity and performance of the golf club. (See col. 1, lines 28-67; col. 4, lines 8-33.) "The screws can be changed quickly and easily as desired to adjust head weight and weight distribution, allowing a head to be fined tuned to a particular golfer's requirements." (See col. 2, lines 37-41.)

In one example, Parente discloses providing seven different sets of screws. "Any screw from any of the seven sets may be used at any of the three positions, providing a very large number of possible different weight distributions, and a large degree of adjustability in the same club head, while maintaining an optimum total weight. By using

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different screw weights at the different positions, the position of the center of gravity as well as the size of the sweet spot, and the overall 'feel' and playing characteristics of the club can be readily adjusted." (See col. 4, lines 16-24.) Parente further discloses that more than three screws can be used in the sole "for an even greater range of weight adjustment." (See col. 4, line 64 - col. 5, line 2.) Parente teaches that "the screws may be changed readily until the optimum weighting for a particular golfer is achieved." Thus, it would be understood that any number of weighting strategies may be employed in Parente's club head. The weights are not contiguous with the face of the golf club head.

Accordingly, Parente establishes a case of anticipation in regards to claims 1-6, 8, 10-14 and 16-19 as discussed in Ground #2 in the attached non-final office action. Issues #2 establishes a reasonable likelihood that requester will prevail with respect to claims 1-6, 8, 10-14 and 16-19 of Gillig.

6. **Issue #4** Billings in relation to claims 1-6, 8, 10-14 and 16-19.

It is agreed that there is a reasonable likelihood that the requester will prevail with respect to at least one claim in relation to Billings as applied to claims 1-6, 8, 10-14 and 16-19.

Billings discloses a golf club head 100 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See, col. 2, lines 8-14.) The golf club head in Billings has an empty internal cavity 118 ("void space") behind the face plate 110 and above a sole portion 112 for placing weighting material within the internal cavity of the club head. (See col. 2, lines 45-49.) Billings discloses a golf club head having a removable port cover 120 for

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accessing the interior cavity 118 for placement of weighting material, such as lead tape, into the interior cavity. (See col. 2, lines 51-54.) The placement of weighting material allows a user to adjust or customize the location of the center of gravity of the golf club head. "FIG. 5 illustrates the hollow golf club head 100 with the crown portion 114 separated from the sole and wall portion 112 and rotated to face the inner wall towards the reader in order to illustrate potential placements of weighting material." (See col. 3, lines 47-50.) Billings discloses the effects of placing weights in each of the locations shown in Fig. 5. The majority of weight strips are not contiguous with the front face of the head.

Accordingly, Billings establishes a case of anticipation in regards to claims 1-6, 8, 10-14 and 16-19 as discussed in Ground #4 in the attached non-final office action. Issue #4 establishes a reasonable likelihood that requester will prevail with respect to claims 1-6, 8, 10-14 and 16-19 of Gillig.

7. **Issue #5** Hoffman in relation to claims 1-6, 8, 10-14 and 16-19.

It is agreed that there is a reasonable likelihood that the requester will prevail with respect to at least one claim in relation to Hoffman as applied to claims 1-6, 8, 10-14 and 16-19.

Hoffman discloses a golf club head 28 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See col. 3, line 58 - col. 4, line 5.) Hoffman's club head 28 includes four recesses 96, 98, 102, 104 formed in the wall of the club head body 92. (See col. 7, lines 36-40.) Each recess is positioned behind the face plate and above a sole portion of the

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club head. (See Figs. 2-5.) Hoffman's "sole" includes both a curved bottom portion that rests on the ground and a skirt or sidewall portion that is above the ground. Hoffman's recesses 96, 98, 102, 104 are all located in the skirt or sidewall portion and thus not on the sole portion to the degree claimed. The recesses are considered to be voids.

Hoffman discloses the use of a set of weights 24 including two weight assemblies 30 of about 10 grams and two screw weights 32 of about 2 grams that are sized to be received in any of the four recesses 96, 98, 102, 104 formed in the club head 28. (See col. 3, lines 58-66.) "Varying placement of the weights enables the golfer to vary launch conditions in the club head, for optimum distance and accuracy. More specifically, the golfer can adjust the position of the club head's center of gravity, for greater control over the characteristics of launch conditions and, therefore, the trajectory of the golf ball." (See col. 3, line 66 - col. 4, line 5.) Hoffman discloses a wrench by which a golfer can attach and remove weights 24.

Accordingly, Hoffman establishes a case of anticipation in regards to claims 1-6, 8, 10-14 and 16-19 as discussed in Ground #5 in the attached non-final office action. Issue #5 establishes a reasonable likelihood that requester will prevail with respect to claims 1-6, 8, 10-14 and 16-19 of Gillig.

No Reasonable Likelihood of Prevailing

2. US Patent 5,911,638 to Parente alone, Parente in combination with Ellingham, and Hoffman in relation to dependent claim 9.

It is NOT agreed that there is a reasonable likelihood that the requester will prevail with respect to claim 9.

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Claim 9 adds that at least one selected strategy includes weighting means not contiguous with any inner surface of said void space.

Parente teaches screws that protrude into the inner surface and thus are contiguous with an inner surface of the void space. The Requester notes that a variety of screws may be used with Parente and then speculates in the claim chart (Appendix B) that "At most, Parente's screw weights may contact an edge or boundary of an inner surface of the void space". If the screws contact an edge or inner surface of the void space, then they are contiguous with the void space. The term contiguous means "touching". Therefore Parente fails to show the recited limitation that the weights are *not contiguous with any* inner surface of the void space. As to Parente in view of Ellingham (Issue #6), again the Requester speculates that the teachings of Ellingham would provide for the screws extending into the hollow head of Parente (Claim chart Appendix C). If the screws extend into the head as proposed in the rejection then the screws (weights) would be contiguous with the inner surface and opposite to the claim limitation of the weights are *not contiguous with any* inner surface of the void space.

The weights of Hoffman are in direct contact the recesses and thus are contiguous with the inner surfaces of these voids.

Accordingly, as Parente alone, Parente in combination with Ellingham, and Hoffman each fail to show the claimed subject matter, there is not a reasonable likelihood that the requester will prevail with respect to claim 9.

Conclusion

5. Please mail any communications to:

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Page 12

Attn: Mail Stop "Inter Partes Reexam"

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Commissioner for Patents
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Alexandria VA 22313-1450

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401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Matthew C. Graham/

Matthew C. Graham
CRU Examiner
3993
(571) 272-7116

Conferees: /BKG/
/PCE/

9/18/2012 mcg

A1088



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/002,049	07/20/2012	7128660	0EKM-168548	5600

27353	7590	09/25/2012
MELVIN K. SILVERMAN AND ASSOCS PC		
500 WEST CYPRESS CREEK ROAD		
SUITE 350		
FT. LAUDERDALE, FL 33309		

EXAMINER	
GRAHAM, MATTHEW C	

ART UNIT	PAPER NUMBER
3993	

MAIL DATE	DELIVERY MODE
09/25/2012	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Transmittal of Communication to Third Party Requester <i>Inter Partes</i> Reexamination	Control No.	Patent Under Reexamination	
	95/002,049	7128660	
	Examiner	Art Unit	
	MATTHEW C. GRAHAM	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
12275 EL CAMINO REAL, SUITE 200
SAN DIEGO, CA 92130

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

OFFICE ACTION IN INTER PARTES REEXAMINATION	Control No.	Patent Under Reexamination
	95/002,049	7128660
	Examiner	Art Unit
	MATTHEW C. GRAHAM	3993

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Responsive to the communication(s) filed by:

Patent Owner on _____

Third Party(ies) on _____

RESPONSE TIMES ARE SET TO EXPIRE AS FOLLOWS:

For Patent Owner's Response:

2 MONTH(S) from the mailing date of this action. 37 CFR 1.945. EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.956.

For Third Party Requester's Comments on the Patent Owner Response:

30 DAYS from the date of service of any patent owner's response. 37 CFR 1.947. NO EXTENSIONS OF TIME ARE PERMITTED. 35 U.S.C. 314(b)(2).

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

This action is not an Action Closing Prosecution under 37 CFR 1.949, nor is it a Right of Appeal Notice under 37 CFR 1.953.

PART I. THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892
2. ☐ Information Disclosure Citation, PTO/SB/08
3. ☐ _____

PART II. SUMMARY OF ACTION:

- 1a. ☒ Claims 1-6,8,10-14 and 16-19 are subject to reexamination.
- 1b. ☒ Claims 7, 9 and 15 are not subject to reexamination.
2. ☐ Claims _____ have been canceled.
3. ☐ Claims _____ are confirmed. [Unamended patent claims]
4. ☐ Claims _____ are patentable. [Amended or new claims]
5. ☒ Claims 1-6,8,10-14 and 16-19 are rejected.
6. ☐ Claims _____ are objected to.
7. ☐ The drawings filed on _____ ☐ are acceptable ☐ are not acceptable.
8. ☐ The drawing correction request filed on _____ is: ☐ approved. ☐ disapproved.
9. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d). The certified copy has: ☐ been received. ☐ not been received. ☐ been filed in Application/Control No 95002049.
10. ☐ Other _____

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NON-FINAL REJECTION

1. The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Ground #1** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35

U.S.C. 102(b) as being anticipated by Vincent.

A detailed analysis as to how Vincent shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix A) and is hereby incorporated by reference. Specifically, Vincent discloses four embodiments of a golf club head having three peripheral weights 11, 12, 13. Vincent teaches that the centers of gravity of the weights form a triangle, and that the "weights are located substantially in a weight plane which is inclined with respect to the plane of the ground when the head rests on the ground." (See col. 2, lines, 30-33.) Vincent discloses two embodiments in which the inclined weight plane extends from the upper-front to the lower-rear of the golf club head (Figs. 7-10 & 11-14), and two embodiments in which the inclined weight plane extends from the lower-front to the upper-rear of the golf club head (Figs. 15-18 & 19-22). Vincent discloses that the weights 11, 12, 13 may be "separate from the head and are attached"

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to the golf club head in the form of screw weights. (See col. 8, lines 3-6 and Fig. 25.) At least one of these weights 11 is in a void space and not contiguous with the front face of the club head.

3. **Ground #2** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Parente.

A detailed analysis as to how Parente shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix B) and is hereby incorporated by reference. Specifically, Parente discloses the use of screws 14, 16, 18 as weights in a golf club head. The screws are received in through bores 43, 44, 45 in the sole plate 12 and into threaded bores 40, 41, 42 in the body 10. (See col. 3, lines 40-44 and Figs. 1-4.). Parente provides a "number of different sets of screws of different lengths, and thus different weights." (See col. 3, lines 49-50.) Parente states that "the only limitation on maximum screw length is the height of the cavity itself" (See col. 4, lines 62-63), thus teaching use of a longer screw weight, up to the maximum permissible length. The screws are used to adjust weighting in the club head and thereby alter the center of gravity and performance of the golf club. (See col. 1, lines 28-67; col. 4, lines 8-33.) "The screws can be changed quickly and easily as desired to adjust head weight and weight distribution, allowing a head to be fined tuned to a particular golfer's requirements." (See col. 2, lines 37-41.)

In one example, Parente discloses providing seven different sets of screws. "Any screw from any of the seven sets may be used at any of the three positions, providing a very large number of possible different weight distributions, and a large degree of

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adjustability in the same club head, while maintaining an optimum total weight. By using different screw weights at the different positions, the position of the center of gravity as well as the size of the sweet spot, and the overall 'feel' and playing characteristics of the club can be readily adjusted." (See col. 4, lines 16-24.) Parente further discloses that more than three screws can be used in the sole "for an even greater range of weight adjustment." (See col. 4, line 64 - col. 5, line 2.) Parente teaches that "the screws may be changed readily until the optimum weighting for a particular golfer is achieved." Thus, it would be understood that any number of weighting strategies may be employed in Parente's club head. The weights are not contiguous with the face of the golf club head.

4. **Ground #4** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Billings.

A detailed analysis as to how Billings shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix D) and is hereby incorporated by reference. Specifically, Billings discloses a golf club head 100 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See, col. 2, lines 8-14.) The golf club head in Billings has an empty internal cavity 118 ("void space") behind the face plate 110 and above a sole portion 112 for placing weighting material within the internal cavity of the club head. (See col. 2, lines 45-49.) Billings discloses a golf club head having a removable port cover 120 for accessing the interior cavity 118 for placement of weighting material, such as lead tape, into the interior cavity. (See col. 2, lines 51-54.) The placement of weighting material allows a user to adjust or customize the location of the center of

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gravity of the golf club head. "FIG. 5 illustrates the hollow golf club head 100 with the crown portion 114 separated from the sole and wall portion 112 and rotated to face the inner wall towards the reader in order to illustrate potential placements of weighting material." (See col. 3, lines 47-50.) Billings discloses the effects of placing weights in each of the locations shown in Fig. 5. The majority of weight strips are not contiguous with the front face of the head.

5. **Ground #5** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoffman.

A detailed analysis as to how Hoffman shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix E) and is hereby incorporated by reference. Specifically, Hoffman discloses a golf club head 28 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See col. 3, line 58 - col. 4, line 5.) Hoffman's club head 28 includes four recesses 96, 98, 102, 104 formed in the wall of the club head body 92. (See col. 7, lines 36-40.) Each recess is positioned behind the face plate and above a sole portion of the club head. (See Figs. 2-5.) Hoffman's "sole" includes both a curved bottom portion that rests on the ground and a skirt or sidewall portion that is above the ground. Hoffman's recesses 96, 98, 102, 104 are all located in the skirt or sidewall portion and thus not on the sole portion to the degree claimed. The recesses are considered to be voids. Hoffman discloses the use of a set of weights 24 including two weight assemblies 30 of about 10 grams and two screw weights 32 of about 2 grams that are sized to be received in any of the four recesses 96, 98, 102, 104 formed

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in the club head 28. (See col. 3, lines 58-66.) "Varying placement of the weights enables the golfer to vary launch conditions in the club head, for optimum distance and accuracy. More specifically, the golfer can adjust the position of the club head's center of gravity, for greater control over the characteristics of launch conditions and, therefore, the trajectory of the golf ball." (See col. 3, line 66 - col. 4, line 5.) Hoffman discloses a wrench by which a golfer can attach and remove weights 24.

Conclusion

6. In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be an Action Closing Prosecution (ACP), will be governed by 37 CFR 1.116(b) and (d), which will be strictly enforced.

7. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 7,128,660 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2686.

8. Patent owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 CFR 1.530(d)-(j), must be formally presented pursuant to 37 CFR 1.52(a) and (b), and must contain any fees required by 37 CFR 1.20(c).

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Art Unit: 3993

9. Any inquiry concerning this communication should be directed to Matthew

C. Graham at telephone number 571-272-7116.

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Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Matthew C. Graham/

Matthew C. Graham
CRU Examiner
3993
(571) 272-7116

Conferees: /BKG/
/PCE/

9/19/2012 mcg

12/21/12

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENTEE: Gillig
RE-EXAM APPLICATION NO.: 95/002,049
RE-EXAM FILING DATE: 7/20/2012
PATENT NO.: 7,128,660
CONFIRMATION NO.: 5600
ATTORNEY DOCKET NO.: OEM-168548
EXAMINER: Graham

RESPONSE TO OFFICIAL ACTION

Mail Stop: Ex Parte Re-Exam
Central Re-Examination Unit
Hon. Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Kindly enter the following response to the Official Action dated September 25, 2012.

Amendments to the Specification begin on Page 2 of this paper.

Amendments to the Claims None.

Amendments to the Drawings None.

Remarks/Arguments begin on Page 3 of this paper.

Amendments to the Specification:

Please amend Col. 3, Line 12, at the second full paragraph on Page 2 as follows:

It is a further object to provide a club head, modified with a hollow interior and having selectable point, axis, vector and distributed linear or non-linear weights which may be inserted or removed to suit particular preferences, needs and physiologic requirements of a golfer.

REJECTION GROUND NO. 1

Rejection No. 1 is that the claims at issue are anticipated by Vincent.

Vincent, it is initially noted, is not a hollow head club, is not end user adjustable, and does not even purport to provide a volumetric weighting system. Rather, it is one which simply provides three peripheral weights 11, 12 and 13 (Col. 6, Lns. 35-38) to form either of two *virtual* dihedrons having an internal angle of between 20 and 60 degrees and in which the face-to-rear Y-axis symmetry of said dihedron may be reversed to achieve different inertial effects of the virtual triangles, shown in Fig. 14 and 22 of Vincent. By changing angulation, the inertial plane of virtual one vertical triangle may change to the effective launch angle of the golf ball. Stated otherwise, Vincent does not teach a concept of interior weighting since none of its weights are actually within the void space behind the face plate of the golf club or above the sole portion thereof. In Vincent's first embodiment, weights G1 and G2 exist immediately behind and abut the inner surface of the face plate. In the invention of the second embodiment weights G2 and G3 are immediately behind face plate 2 and abut the same. As such, Vincent weights the Y=0 position, putting it outside of the scope of the claims at issue.

Notwithstanding the above, the fundamental distinction (peripheral versus interior) in weighting strategy of Vincent to that of the '660 patent lies in its *simulation* of internal weighting by use of a virtual inclined plane which Vincent

purports to exist at the line marked P1 in Figs. 8, 10 and 12 or along the diagonal line marked P2 in Figs. 16 and 20. It is further noted that Vincent's entire weighting capability thereof is limited to that of a virtual diagonal plane having a 20 to 60 degree angulation but only within the areas of virtual triangles TR positioned upon the virtual surfaces P1 or P2. Therefore, Vincent, at best, can only provide a virtual interior weighting of 40 of 90 possible degrees of weighting.

The only form of interior weighting even referenced by Vincent is that of "a local increase of the thickness of a wall of the zone under consideration." Col. 6, Lns. 38-39. Claim 6 of Vincent indicates that any change of the weight G1, G2 or G3 would be effected by a "local increase" in the thickness of the respective walls." Col. 9, Lns. 5-6. As such, there simply is no internal weighting in Vincent. Rather, there are, simply internal effects, limited to the triangles TR shown in phantom in Figs. 14 and 22 upon planes P1 and P2 respectively. That, in other words, constitutes the totality of the purported inertial weighting capability of Vincent, notwithstanding that each of such triangles may purportedly be angulated within the range of 20 to 60 degrees, but only if weights 11, 12 and 13 are re-positioned at the time of production of the club!

As may be appreciated, without the benefit of a degree in higher mathematics, the purported weighting triangles of Vincent constitute but a small percent of the total volume of the void space of a hollow metal wood club head and, in any event, is no more coordinate-specific than the planar area of the

respective triangles shown in Figs. 14 and 22. Importantly, Vincent indicates his invention to be “an improvement of a wood-type head.” As such, Vincent is applicable to a club head having a hollow body but one requiring a “filling material” such as a foam or polyurethane be used in the interior of the hollow body. Col. 6, Lns. 25-28, and Col. 7, Ln. 6. This limitation would render impossible the practice of any of the end-use weighting strategies of the ‘660 patent.

The nature of the above-referenced triangular weighting planes are well-defined in Claim 7 of Vincent which, in referring to weights G1, G2 and G3, indicates:

“...the three centers of gravity of the three weights forming a triangle located substantially in a weight plane which is inclined with respect to the plane of ground when the head rests on the ground.”

The above is an accurate summary of the invention of Vincent, that is, three peripheral weights in differing peripheral locations are employed to create and move both a virtual triangle located upon in a virtual weight plane which is inclined with respect to the ground. This is what Vincent teaches. No more — no less. The technology of Vincent is simply that of a club head having superior inertial stability in three dimensions. Col. 2, Lns. 6-26.

The technology of Vincent also presents certain practical problems, which are not present in the system of the '660 patent. For example, to define the "weighting triangle" upon planes P1 or P2 of Vincent, it is necessary to determine the center of gravity of each weight 11, 12 and 13 since the center of gravities thereof, namely, points G1, G2 and G3 constitute the vertices of the respective two weighting triangles TR. In other words, the vertices of the triangles TR of Vincent turn upon the centers of gravity of each of each of the weights G1, G2 and G3, which may be difficult to ascertain. Apparently, the angle A of the dihedral of Vincent is a function of the relative masses M1, M2, and M3 of the weights G1, G2 and G3 respectively. As such, these masses must be known to determine what an angle A of one or the other of the dihedrons of Vincent will be. As such, the angulation of each of the triangular weighting regions of Vincent may be difficult to establish in the absence of a calculation occurring during production of the club head. The above would mean that the location of the weights G1, G2 and G3 of Vincent would require a different vertical location for each change of angle A of the dihedral and therefore is not a user-adjustable system but, rather, is one that a manufacturer might find of value in offering to the public a ball club head having a particular planes of inertia, apparently for trajectory-related purposes. Further, the adjustment of the inertial planes P1 or P2, and, more particularly, the angle of the planes and their triangular subsets TR ground, represent the only parameters which are adjustable under the teaching of Vincent.

Of particular interest is the fact that the technology of Vincent addresses almost none of the ball performance issues of the '660 patent. That is, none of the issues of hook, slice, spin, backspin, ballooning, penetration, or even trajectory are referenced in Vincent. His only variable is the inertial plane of the virtual triangles TR. It thus the case that only the inertia of the launch angle may be adjusted at the time that the club is manufactured and no parameter is end-user adjustable. Clearly, given the absence of the capability of Vincent to adjust at a user level any of the parameters addressed by the teaching of '660 patent, Vincent can be relevant only to the extent that a small subset of the parameters of hook, slice, spin, backspin, ballooning, penetration and trajectory possibly could be influenced by the angulation of the triangle TR within weighting planes P1 or P2 of Vincent. These parametric terms do not even exist in the Vincent patent. In other words, only a small subset of the possible adjustments of the '660 patent could be possible in Vincent even if the same were somehow rendered hollow and accessible to an end user of the golf club head.

Any effort by Vincent to address hook or slice, that is, by a variation weight 12 versus that of weight 13 shown in the embodiments of Figs. 7-18 thereof, would inherently result in a decrease or increase in trajectory, an effect most often at cross purposes to the selected angulation of the inertial weighting plane of Vincent. While such angulation will of course affect trajectory, Vincent contains no teaching whatever as to how such inertial planes could be changed at a level of an end user. Vincent, as such, teaches nothing more than a peripheral weighting system capable of launch angle and inertial adjustments

within only two small virtual triangular areas TR within the virtual weighting planes P1 and P2. Given these limitations, no means of adjustment, even at a manufacturing level is suggested with regard to any parameter other than ball flight trajectory. In light of the above, whichever weighting plane, whether P1 or P2 of Vincent is selected, the technology of Vincent lacks the ability to alter any weighting adjustment after a given P1 or P2 is established. As such, the modifications of backspin, ball penetration, ballooning and even trajectory which, are among the weighting strategies in the '660 patent, cannot be accomplished because the inertial triangle TR of the club has already been permanently fixed unless the club is returned to the factory for a retrofit of the G1, G2 and/or G3 weights thereof and their height above the sole plate.

The concept of user adjustability of weighting within all or part of the three-dimensional matrix within a hollow club reverts to at least Gillig's applications Provisional Application No. 60/205,250, filed May 19, 2000 to which priority is claimed under 35 U.S.C. 120 and, as is shown in the included Declarations under 37 CFR 1.131, Gillig's ideas relative to a hollow club head reverts to at least to 1998. Also, the '660 technology has always pertained to the use of re-positionable weighting elements by a particular golf to modify performance aspects of a hollow club, including ball flight performance. See for example, the '660 patent, Col. 2, Lns. 62-68 as follows:

"It is accordingly an object of the invention to provide a golf club having a weight modifiable club head, inclusive of interchangeable sole plates and/or weighting elements, which express a *universal* method of golf head modification to

account for ball backspin, penetration, trajectory and hook or slice. [Emphasis added].

And, as well, Col. 3, Lns. 11-15 as follows:

“It is a further object to provide a club head, modified with a hollow interior and having selectable point, axis, vector [and] distributed linear or non-linear weights which may be inserted or removed to suit particular preferences, needs and physiologic requirements of a golfer. “

Vincent, as above set forth, provides no weighting elements that are adjustable by the end user. And, as well, the theory of Vincent enables weighting only within the planes of small virtual internal triangles, the only apparent effect of which is to define inertial multi-axes planes of ball launch through the use of a peripheral strategy which, as such, could only adjust the parameter of trajectory even if the system of Vincent were adjustable usable by a particular golfer and if its head were hollow. The presence of a foam, such as polyurethane (Col. 6, Ln. 28) within the head precludes end-user adjustability even if a means of user adjustment of the weights 11, 12 and 13 were taught. The head of Vince, once filled, cannot be re-filled afterwards. Finally, since every embodiment encroaches upon the back of the face plate, the '660 claims cannot be anticipated. Vincent also contains no intimidation of multiple weighting strategies.

REJECTION GROUND NO. 2

With respect to the ground of rejection No. 2, that is, the reference to Parente under 35 U.S.C. 102(b). Fundamentally, Parente does not teach a method of volumetric weighting within a virtual X, Y, Z orthonormal coordinate system. By his own statements, e.g., Col. 5, Ln. 8, 15-17, his teaching is strictly that of a peripheral weighting system, meaning, in the context of the '660 patent, that no weighting can be achieved within the central void space of the club, including the crown region, regardless of the weight or length of the screws which are employed. See for example Fig. 2 of Parente, indicating that no weighting of the type shown in Figs. 2 or 6 of the '660 patent can be employed. That is, weighting at X2, Y2, and any of Z1, Z2 or Z3 are not possible in Parente. The consequences of this limitation are apparent from Fig. 13 of the '660 patent. Basically, all neutral X weighting options of '660 cannot exist in Parente.

However, of equal importance is the apparent misapprehension on the part of both the Examiner and Petitioner (as is evidenced in Petitioner's analysis of Appendix B), that the mere "spanning" of a particular Z axis coordinate, at whatever location about the periphery of the sole plate of the club, will result in effective weighting at such a location when the club head is in dynamic use. This distinction was recognized in the reference to Nix (Exh. A to the Gillig Declaration) which teaches that the location of a weighted coordinate must be clearly defined to have a desired weighting effect. Note void spaces 11 over

weights 9 in Fig. 2 of Nix, and a lighter metallic plate 6 below the void spaces. The teaching of Tilley (Gillig. Dec. Exh. D) is similar. In other words, every coordinate that is weighted produces a weighting effect, but one must do more than merely "span" a coordinate of interest to effect a specific weighting at that coordinate. As pointed out at ¶5 of Gillig Dec., the effect of an axial or linear weighting across a given coordinate is to reinforce its effect at the center of gravity of the axial weight. That is, in terms of club performance, the effects of the top and bottom of a linear weight such as a screw will cancel each other out in favor of a dominating effect of the center of gravity of the linear element. For example, if any of the screws 14, 16 or 18, however positioned about the periphery of the sole plate, were extended to the top of the cavity 32, the effective weighting thereof would only occur at the Z2 location. In terms of ball flight effect of such weighting, the Z1 and Z3 parts of an elongate weight such as a screw, of whatever mass, would effectively cancel each other out, such that the center of gravity of the linear weight would predominate in terms of its dynamic effect on ball flight.

By the same token, if the height of a given linear weight, such as a screw, was at the Z2 position, the center of gravity thereof, that is, about the Z1.5 position, would predominate, thereby resulting in effective dynamic weighting, upon ball strike, of lower than the Z2 position. Stated otherwise, apart from the complete lack of any Z3 weighting possibility in Parente, regardless of the number of different sets of screws, length or differences in weight thereof,

aerodynamic weighting above height the Z2 height position is not possible even if such screws were to extend to the top of the cavity 32.

As such, and with reference to Exh. B-2 of Petitioner's App. B, no "Zn" weighting coordinates, even at the periphery of the club, are possible other than for the values of $Z = 1$ or $Z = 2$, this for the reasons set forth above. Further, as the Petitioner's Exh. B-2 points out, weighting at an X2, Y2 location is never possible in the teaching of Parente since, to weight X2, one must concurrently weight Y3; and to weight X1 one must concurrently weight Y2. See Lines 41 and 42 of Exh. B-2 (p. 67) to Petitioner's Claim Chart of App. B. This as well, it is clear from Fig. 2 of Petitioner's Exh. B-1 (p.66).

In terms golf ball performance, there are numerous consequences of the above limitations of Parente, the most significant being that various neutral setting and, particularly, combinations of neutral settings or strategies using such settings are not possible. See, for example, Fig. 3 of the '660 patent. If a particular X2 together with a particular Y2 is desired, this cannot be accomplished by Parente. For example, a golfer that does not require hook/slice adjustment or any backspin adjustment, cannot even attempt to adjust ballooning without also causing an effect upon hook/slice or backspin of Parente.

With regard to the importance of Z3 dynamic weighting, the weighting scenarios set forth in Figs. 4 and 5 of the '660 patent, namely, low trajectory,

minimum backspin, maximum penetration, and minimum ballooning are all available. Fig. 2 of the '660 patent shows an absolutely neutral weighting at X2, Y2, Z2 which would be of value to a golfer with a weaker swing but no other mechanical issue, simply wishing to increase the mass at the absolute center of gravity of the club head to increase the distance of ball flight without affecting any other ball flight characteristics. Parente cannot accomplish this.

The capabilities taught by the '660 patent are summarized in Charts 1, 2 and 3 appearing in Columns 6 and 7 of the patent which provide a summary of the examples provided in the patent where the weighting of different particular orthonormal coordinates is desired to achieve particular ball flight effects.

As may be noted, the capability of concurrent neutral X and neutral Y weighting, as is illustrated in Figs. 2, 6 and 16, cannot be achieved by Parente. Further, Charts 2 and 3 indicate that without the capability of YZ specific weighting, the weighting combinations shown in Figs. 6, 8C, and 10 of '660 cannot be accomplished. In fact, it is only because of the many hundreds of weighting combinations rendered possible by the '660 method of use of volumetric coordinates of specific weighting, that a *combination* of weighting strategies, as claimed, is possible. The Petitioner, and apparently the Examiner, at least with respect to Ground 2, does not consider that the independent weighting strategies set forth in Claim 1 and Claim 11, even they could be

practiced can be practiced but separately by Parente, could not be practiced in combination.

At its simplest level, and as above noted, it can be understood that no form of high Z or Z3 weighting can be attempted in Parente without simultaneously weighting the Z1 and Z2 positions, the effect of which (see the Gillig Dec., ¶ 5) is a dynamic effect only at the center of gravity of such a linear weight unless, as is taught by Nix and Tilley, the weight is suspended at the coordinate of interest. See ¶11 of Gillig Dec., reciting that he experimented with weighted sheets of different surface geometries and Styrofoam sheets to define discreet points or level locations of desired weighting coordinates. This is shown in the photographs of Exh. G to the declaration. Note, *inter alia*, the Abstract of the '660 patent which states a purpose of the invention is to "provide single or combinations of selectable weighting elements within volumetric coordinates of an orthonormal matrix about the void space [of the club head.]

Parente simply is not a volumetric weighting system and, apparently, the Examiner's argument, as well as that of Petitioner's, is that an equivalent of a volumetric weighting system can be achieved through the peripheral weighting system of Parente, but such is not possible. However, even if possible, the same still would not read on the claims at issue.

As a practical matter, an individual screw, in any of the screw sets suggested by Parente, cannot exceed a weight of 5 grams each. Three screws result in 15 grams of weighting with 6 to 15 grams being the recited range. Col. 3, Lns. 66-67. Parente notes that additional bores and related screws may be provided. However, regardless of the number of screws, even at 5 grams, for each such screw, they could not produce a substantial performance effect upon a modern golf club head which typically is in a range of about 200 grams for a driver. Parente, in addition to its above set forth parametric limitations is, in reality, a system for fine tuning of a golf club head, not one intended to effect a significant degree of change of performance. Col. 2, Lns. 40-41.

Parente at Col. 1, Lns. 37-39, distinguishes his weighing system from that of others in the statement:

“Some heads have internal cavities in which weights such as lead slugs may be placed in order to suit the needs of different golfers.”

As such, Parente expressly differentiates his peripheral weighting system from that of the art, as he iterates at Col. 2, Lns. 35-38:

“To provide the required total club weight and desired weight distribution, without requiring additional lead slugs or other more complex weighting systems which add expense to the club.”

The '660 patent however is not concerned with complexity or cost as, for example, is set forth at Col. 3, Lns. 11-15 thereof which state:

“It is a further object to provide a club head, modified with a hollow interior and having selectable point, axis, vector [and]

distributed linear or non-linear weights which may be inserted or removed to suit particular preferences, needs and physiologic requirements of a golfer.

As above discussed, it is apparent that access to the volumetric coordinates of Gillig's virtual matrix cannot be accomplished without a complex geometric weighting system as is set forth in the many examples shown in the drawings and discussed with the text of the '660 patent.

In summary, even if effective coordinate weighting through a spanning strategy were possible, as Petitioner and Examiner argue, the fact remains that in reaching the Z3 position, with respect to any screw location, one would be simultaneously weighting all of the Z1, Z2 and Z3 positions in the teaching of Parente. Such concurrent weighting would, as may readily be seen in Figs. 4 and 5 of the '660 patent have the effect of the Z1 weighting offsetting that of the Z3 weighting, such that the net effect of such a "spanning" theory is that of an effective weighting at Z2 even with a screw extending to the top of cavity 32 of Parente.

Resultantly, even apart from the issue of inability of access of the central X2, Y2 volumetric region of the void space, the teaching of Parente is unable to employ any of the selectable weighting strategies claimed by '660 patent which require change or variation which involve a high (Z3) coordinate. And this is the case in three of the four weighting strategies of Claim 1, one of the two weighting strategies of Claim 11, and all three of the weighting strategies of Claim 12. For

this reason, even with regard to those weighting strategies which are enabled by the teaching of Parente, the combination of a minimum of two weighting strategies required by the claims of the '660 patent is out of reach in the technology of Parente.

If no weighting is possible at the X2, Y2 for any of the Z1, Z2 or Z3 positions shown in Fig. 2 of the '660 patent, one cannot accomplish an adjustment for medium ballooning, for neutral hook or slice, or for a neutral effect upon backspin. For example, should one add significant weight to the heel relative to the toe, a benefit relative to hook or slice will be accomplished, however, at the expense of increased Z weighting (See Figs. 4 and 5 of the '660 patent) which the golfer may not desire. These problems cannot be simply resolved by simply adding to the number of bores, holes and screw about the periphery of the sole plate of Parente.

It is further noted that, in Parente, in his use of shorter screws at 14, 16 and 18, or whatever number of screws might be employed therein, all of these correspond to a lower weight screw while the use of a higher screw always corresponds to a heavier weight. See Col 3, Lns. 52-58. This adds another limitation to the weighting and therefore performance potential of Parente. For example, since a short screw is always of a lower weight, even if a higher weight screw is selected, one is faced with a situation in which one could never obtain a heavier low Z setting, which would correspond to optimal penetration of ball flight

at Y=3 and, similarly, one could never obtain a heavy low Z setting in the front of the club (Y=1) which would correspond to a maximum ballooning action.

The obverse of the above is also the case in that one can never place a light weight at a high position (Col. 3, Lns. 56-58), for example, a Y3, Z3 position, because, even if one accepted the Petitioner's construction of Parente, a high Z position would inherently entail a higher weight which is not desirable for every setting or adjustment which a golfer may desire. In other words, all heavier screws in the Parente system extend to a greater height, whether the effective height thereof is that of a Z2 or Z3 coordinate, even if such weighting is not desirable for a given ball flight performance objective.

At Col. 3, Lns. 49-50, Parente recited that screw *weight* is a function of screw *length* in referring to "different sets of screw of different lengths and thus different weights."

Accordingly, as above discussed, one cannot have a heavy screw of short length in the contemplation of Parente or a long screw that is light.

Parente discusses his objectives as "fine tuning" at Col. 2, Lns. 37-41, and further, at Col. 4, Lns. 16-24, he refers to "a large degree of adjustability of the same club head, while maintaining an optimal total weight." The '660 invention is not necessarily concerned with total weight after a coordinate has been

weighted. As such, Parente makes no claim to an unlimited extent of adjustability, which is consistent with his statement regarding *fine tuning* to the particular golfer's requirements.

Parente also cannot qualify as prior art under 35 U.S.C. §102(b) since it was issued less than one year before the priority date of May 19, 2000 of the '660 patent, that is, the date of a provisional that matured into U.S. Patent No. 6,538,848, (see Exh. O of Gillig Dec.), the parent of the '660 patent. As well, the '848 patent teaches perimeter weighting as well as sidewall weighing per the embodiment of Fig. 4. thereof.

In view of the above, Parente cannot anticipate the claims of the '660 patent.

THERE IS NO REJECTION GROUND NO. 3

REJECTION GROUND NO. 4

With respect to Ground No. 4, that is, the reference to Billings, it bears an effective date of January 10, 2002, whereas the effective date of the '660 patent's claim to priority is that of the a provisional application, filed May 19, 2000, of the parent of the '660. This application is attached as Exh. M to the within Gillig Declaration under 37 CFR 1.131 and 1.132. Said provisional application was later converted to a utility application which matured into U.S. Patent No. 6,530,848 (Exh. O of Gillig Dec.). Both the provisional and the resulting utility patent have effective dates prior to the effective date of Billings.

More particularly, Fig. 4 of '848 each teaches the use of selectable peripheral weights about the sidewalls of a hollow golf club head, the effect of which is identical to Billings's use of tape-like weights 510 through 532 upon the interior surface of a hollow club. This concept is but one of Gillis's 1998-1999 concepts, shown at Exhs. F, G, H (last page thereof) and L to his Declaration (see ¶s 10-13, 19-20) regarding peripheral and lead tape weighting of a golf club head, as well as other athletic gear such as a hockey stick, baseball bat or tennis racket. As such, there is no question that the concept of Billings as is reflected in both the 1999 sketches of Gillig and his provisional application of 2000, are prior to Billings. And, as well, from the Declaration of Gillig, there is no issue with respect to due diligence from the date of conception to the reduction to practice thereof, at least constructively. Billings was not filed until 2002.

However, regardless of whether or not the '660 patent is afforded its proper priority under 35 USC 120, the Gillig Dec. under §1.131 is persuasive with respect to Billings. Further, all of the strips of Billings are placed upon the interior surface of an hollow club and many are horizontally positioned against the base of the face of the golf club. This is clear from Fig. 6 of Billings since the face is reference numeral 110, as well as the description thereof at Col. 3, Ln. 56 thru Col. 4, Ln. 42. The Examiner, at Page 5, Lns. 6-7 of the Official Action indicates that, in his opinion, the majority of the weight strips are not continuous with the front face of the head, meaning that a considerable number (about 35%) of the weight strips of Billings are continuous with the inside of the front face of the head, thereby avoiding the claims of '660. Further, in that the invention of

Billings seeks to address a single issue of ball flight performance, namely trajectory (see Col. 3, Ln. 47 to Col 4, Ln. 35), it does not recognize nor therefore seek to address any weighting theory or combinations thereof in which a first Y coordinate location would not be equal to a second Y coordinate location. In fact, in the illustrated embodiments of Billings, strip 520 is at the same Y location as 524, while strip 518 and 522 also appear to be at the same Y location. That is, Billings contains no teaching of a mix of weighting strategies in which a Y1 of one strategy would not equal a Y2 of another strategy and/or which make no use of weighting at or upon the inside of the face of the club head.

Beyond the above, is the irrefutable fact that Billings provides no teaching whatsoever in respect to coordinate specific volumetric weighting within the void space of the club head. Absent this feature, it cannot read on the claims of the '660 patent. That is, Billings does not purport to teach a virtual X, Y, Z orthonormal coordinate specific weighting system and, further, contains no information regarding user adjustability although Billings makes the statement that his invention "provides a golf club that allows [one] to customize the location of the center of gravity," and allows a user to place weighting material inside of the golf club head, thereby adjusting or customizing the location of the center of gravity. Col. 2, Lns. 8-14. However, there is no reference or even expression of the possibility of volumetric weighting in Billings. As such, its teaching cannot possibly read upon the claims of the '660 patent in that it contains no reference whatsoever to volumetric or X, Y, Z specific coordinate weighting. Billings, by

reason of its publication of July 10, 2003 was certainly not prior art by the filing date of the '660 patent on April 3, 2004. And, it was not cited by the original Examiner. In the '667 patent, a CIP of the '660 patent, Billings was cited but without consequence with respect to allowability of the claims of '667. Ergo, the question, how can a reference having no relevancy to a given structure be relevant to a method that constituted the basis for a structure, both allowed and re-examined? The Examiner, in Ground of Rejection No. 4, does not even assert obviousness of the '660 patent relative to Billings but, rather, cites to §102(b) which is an anticipation rejection in isolation of any other art. That is, in the case of Rejection Ground 4, there is no other reference with which Billings was combined.

Exh. D1 of Appendix D of the Petition indicates that all volumetric weighting coordinate are not possible in Billings. In fact, none of the medium X, Y, and Z coordinates positions can be weighted since all of such positions constitute a complete void space. As such, in petition Exh. D1, there are no weighting locations corresponding to X2, Y2 and Z2, that is, coordinates (and coordinates thereabout) which do not physically touch the interior surface of the void space of Billings. From Billing's explanation of suggested locations of weights 510 through 530, it is apparent that he seeks to address only a subset of the issues of ball flight performance addressed by the '660 patent, that is, only those that are trajectory-related. That however is not relevant to the issue of

validity since hundreds of golf club equipment patents contain differing solutions to the same golf club performance issues and by different methods.

The inherent limitations of adjustability and positioning of the weighting strips of Billings may be appreciated by a reading of the claims thereof in which every location of the weighing strips abuts the inner walls of the hollow shell. It is also to be appreciated that any effort on the part of an end user of the system of Billings to emulate all capabilities of the method of the '660 patent, as claimed, inherently would require placement of weighting at one level or another against the rear of the face of the club.

As the '660 patent notes at Col. 2, Lns. 63-67, it is an object of the method to provide "a weight modifiable club head, inclusive of interchangeable sole plates and/or weighting elements, which express a universal method of golf club head modification to account for ball backspin, penetration, trajectory, and hook or slice." See also Col. 2, Lns. 1-5 of '660. Billings, clearly, is not a universal method of modifying golf club performance since it is unable to access the entire hollow interior of the club. It is vastly different in concept and, as such, it is difficult to conceive that one of skill in the art, by simply reading Billings, could derive the sophisticated volumetric, coordinate-specific combinations of weighting methods of the '660 patent as claimed. Also, Billings does not contemplate a structure which requires opening and closure of the entire club

head to accomplish adjustments of weighting. For example, Col. 3, Lns. 11-15 of '660 states:

"It is a further object to provide a club head, modified with a hollow interior and having selectable point, axis, vector [and] distributed linear or non-linear weights which may be inserted or removed to suit particular preferences, needs and physiologic requirements of a golfer."

As such, it should be appreciated that the contemplation of the '660 patent is that the necessary point, axis, vector, and/or distributed linear or non-linear weighting would be accomplished through the insertion or removal of such elements. The apparent teaching of Billings is that once the strips have been placed in their desired location, crown portion 114 is secured to sole and wall portion 112 (see Fig. 5) and, thereafter, the only adjustability in the future that might be possible is through weighting-port cover 120. In other words, how a user might re-position the top weighting strips of Billings after they have been secured to the crown portion 114 is not disclosed in the specification. That is, once the crown portion 114 is welded or otherwise secured to the lower portion, the upper strips are unreachable by the user. As is apparent in the illustration of Fig. 5, once the upper weighting strips, during the construction of the club head, are positioned, there is no teaching of the manner in which such weighting strips could be re-positioned after the crown portion 114 is welded or otherwise permanently secured to the sole or wall portion 112, since the weighting port cover 120 would remain as the only means of access to the interior of the club head. The first paragraph of Col. 2 of Billings states that such adjustment may be accomplished by "either or both the golfer and the manufacturer, both prior to

and following the final manufacture.” But this cannot be true as to the upper strips since there is no teaching of any way of reaching the upper strips. That is, there is no teaching of any re-positioning of the weighting strips after final manufacture of the golf club head since, at that time crown portion 114 has been welded or otherwise permanently secured to the sole of wall portion 112 of the golf club.

It is, finally, noted that all of the potential adjustments achievable by the teaching of Billings relate only to adjustments of spin and trajectory. Col. 3, Ln. 56, to Col. 4, Ln. 34.

These limitations in the utility of Billings thereby fail to reflect any of the parameters of adjustment of hook, slice, degree of backspin, or ballooning that can be addressed by the '660 patent, whether or not there exists any teaching of user-adjustable *volumetric*, coordinate-specific weighting in Billings.

In view of the above, Billings cannot anticipate structure, function or the claims of the '660 patent and, in any event, Gillig clearly conceived of perimeter strip weighting years before the effective date of Billings as is shown in ¶s 10-13, and 19-20 of his Declaration and Exhs. F, G and L thereof, and was diligent since 1998 as is reflected in his '848 patent (Fig. 4 thereof) having an effective date of May 19, 2000. As such, Billings cannot stand as a reference under 35 USC 102(e) since Billings was not the first to invent.

REJECTION GROUND NO 5

The claims at issue have been rejected under §102(e) as anticipated by Hoffman which claims a filing date of February 23, 2004 and a priority date under 35 USC 120 of November 8, 2002, the date of filing of a patent to Willits. Willits, however, is strictly a sole plate weighting system, not a volumetric coordinate specific weighting system.

The '660 patent was filed about six weeks subsequent to Hoffman, however claims priorities under 35 USC 120 reverting to May 19, 2000, that is, two years before Hoffman's earliest claim of priority (based on Willits). A copy of the provisional of May 19 2000 is attached as Exh. M to the Gillig Dec. and discussed in ¶s 14, 21 and 22 thereof. The '848 patent resultant of the 2000 provisional is attached as Exh. O to the Gillig Dec. It is also noted that the issued utility conversion of Gillig's 2000 provisional, the '848 patent, was cited as a prior art by the Examiner in Hoffman (see Page 2, Col. 2 thereof). As such, Gillig '848 was considered relevant to the Hoffman patent because of its sidewall weighting of Fig. 4 thereof, a fact *contra* to Petitioner's argument that the priority claims of '660 are not valid. Billings, above discussed, was also cited by the Examiner in the Hoffman patent. That the Examiner in Hoffman, one Sebastiano Passaniti, was the same Examiner that issued the '660 patent. This Examiner therefore was aware of both Billings and Gillig '848 patent which claimed priority to his year 2000 provisional of Exh. M. Therefrom, Examiner Passaniti considered the

volumetric weighting concept of Hoffman to be patentably distinct over the strip weighting of Billings. It is noted that the parent of Hoffman, that is, US Patent No. 6,773,360 to Willits, presents but a small sub-set of the teachings of the Gillig 2000 provisional and its resultant '848 utility patent of 2003 (Dec. Exh. O).

In summary, the issue is that of who was first to possess the concept of a volumetric coordinate-specific multi-strategy weighting system, not who was first to invent a sole plate weighting system. The inventor of the '660 patent has presented herewith a Declaration under 37 CFR 1.131 and 132, together with four corroborating declarations, namely, those of Bateman, Sabre, Toski and Wiren. Gillig's conception of the invention as claimed, at least by the 1998-1999 period, is many years prior to the effective date of Hoffman or Willit. Supportive and inclusive of his Declaration, Gillig has attached numerous Exhibits showing the conception of his 27-area weighting system. See, for example, Exh. I of Gillig's Declaration and, specific to the issue of port weighting which apparently constituted a basis upon which Hoffman was able to obtain a patent, Exh. K of Gillig's Declaration provides specific illustrations of port weighting concepts for his ideas with which he experimented in the 1998-99 period. See also ¶19 thereof. Further detail in connection therewith is contained in the corroborating declarations of Bateman, Sabre, Toski and Wiren. Accordingly, it is beyond dispute that Gillig was in possession of the concept of a volumetric coordinate specific weighting system using exterior ports for providing selectable weights

into the hollow interior of a golf club to address specific golf club performance requirements years prior to Hoffman.

Interestingly, trade secret related litigation with respect to the subject of Figs. 19 and 20 of the '660 patent occurred between Triple Tee Golf and Nike Inc. starting in 2004 in which many issues were involved. Gillig's deposition in connection with the so-called 27 location weighting system was taken in December 2004, the same year in which the '660 patent was filed. The benefit of the recorded, sworn, recollection of Gillig in the year 2004 as to his inventive activities by the year 2000 and earlier therefore exists. The so-called 27 point volumetric weighting system within a three-dimensional X, Y and Z coordinate system within the void space of a hollow golf club head is discussed in his testimony, affixed as Exh. N to the Gillig Declaration. Page 265 thereof is representative in which Gillig responds, when asked to read an interrogatory response in which he was asked about his so-called "third trade secret." And, on Page 267, he is asked "has anyone used the 27 point weighting system?" Answer "[n]ot to my knowledge. I have never heard anyone talk about it."

Pages 236 to 240 of Exh. N tie to pp 3-7 of Dec. Exh. G concerning NIKE Exhibits 26-29 about which Gillig testified.

This transcript also makes reference to the possibility that ports could be employed to access the 27 points in Gillig's weighting system. Therefrom, as

well as the material of Exh. K to the Declaration and the corroborating declarations, it may be appreciated that Gillig experimented with many potential solutions to address his universal 3x3x3 coordinate point weighting system within the void space of a hollow metalwood club or the like. See '660 patent, Col. 2, Lns. 63-67. That Gillig had reduced some of these ideas to practice is noted in the corroborating declarations herewith. As such, it is to be appreciated, that Gillig's conception as is reflected in the '660 patent, reverts to the 1998-1999 period and this is fully supported by documentations and deposition testimony including, corroborating declarations of consultants of Gillig with whom he privately shared his thoughts. As such, the reference to Hoffman cannot stand as prior art, particularly, given (a) Gillig's '848 patent teaches sidewall weighting and (b) Gillig's degree of diligence from the period of conception in 1998 or 1999 through his actual filing dated of the '660 patent in 2004. See ¶¶19-24 of Gillig Declaration herewith.

The patentee does not question the functionality of Hoffman but, rather, 35 USC 102(e) cannot be properly applied since Hoffman was not the first to invent Gillig's invention as claimed.

In view of the above, a re-consideration of all bases of rejection is urged.

Respectfully submitted,
TRIPLE TEE GOLF, INC.

By: 

Melvin K. Silverman
Reg. No. 26,234

12/27/2012 16:52 9544890332

M.K. SILVERMAN+ASSOC

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENTEE: Gillig
RE-EXAM APPLICATION NO.: 95/002,049
RE-EXAM FILING DATE: 7/20/2012
PATENT NO.: 7,128,660
CONFIRMATION NO.: 5600
ATTORNEY DOCKET NO.: OEM-168548
EXAMINER: Graham

SUPPLEMENTAL RESPONSE TO OFFICIAL ACTION UNDER 37 CFR 1.945

Mail Stop: Ex Parte Re-Exam
Central Re-Examination Unit
Hon. Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

On December 21, 2012, the Patentee filed a response to an Official Action under 37 CFR 1.945, dated September 25, 2012. The first, and last two pages of this 34-page response are attached herewith, as is copy of the postcard. By U.S. Express Mail the entire responsive package was sent to the U.S. Patent Office. Said package included a 34-page response and over 100 pages of supporting declarations with exhibits.

Page 1 of 4

PAGE 2/20 * RCVD AT 12/27/2012 5:19:19 PM (Eastern Standard Time) * SVR:W*TOFAX-001136 * DNIS:2739900 * CSID:9544890332 * DURATION (mm-ss):05-36

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12/27/2012 16:52 9544890332

M.K. SILVERMAN+ASSOC

PAGE 03/20

Further to an extension for the period for response to yesterday, December 26, said response to filed on December 21, 2012. However, yesterday, upon review of the materials that the person in my office (one Elizabeth Dana) had copied before placing the response into an Express Mail mailer to the PTO Central Re-Examination Unit and into an Priority Mail mailer for opposing counsel, the undersigned discovered that there was no copy of the four supporting declarations, namely, those of Bateman, Sabre, Toski and Wiren, which are set forth at Page 33 and referenced in the body of the Patentee's remarks. The Patentee hereby encloses copies of these four "missing" declarations, and notes that the period for response had previously been extended through December 26.

Although the undersigned cannot be certain whether or not these declarations were or were not included in its response of December 21, 2012, the same are attached herewith. As may be seen, each is a very brief statement of interactions with the inventor John P. Gillig in 1998 or 1999. Also, the present date falls just one day after the extension period of December 26. Accordingly, to the extent necessary, Patentee hereby requests a one-day extension of time, so that the within Supplemental Response may become a part of the Official Record.

Page 2 of 4

PAGE 3/20 * RCVD AT 12/27/2012 5:19:19 PM [Eastern Standard Time] * SVR:W-PTCFAX-001/35 * DNIS:2709900 * CSID:9544890332 * DURATION (mm:ss):05:36

A1264

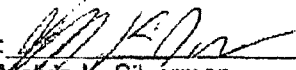
12/27/2012 16:52 9544890332

M.K. SILVERMAN+ASSOC

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Please let the undersigned know if there are any questions with respect to
any of the above.

Respectfully submitted,
TRIPLE TEE GOLF, INC.

By: 
Melvin K. Silverman
Reg. No. 26,234

Attachments herewith:

Pages 1, 32, 33, Certificate of 12/21/12 under 37 CFR 1.18 and postcard copy.
Declaration of Trevor Bateman.
Declaration of David Sabre
Declaration of Robert Toski.
Declaration of Gary Wiren.

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PAGE 4/20 * RCVD AT 12/27/2012 5:19:19 PM [Eastern Standard Time] * SVR:W-PTOFAX-001/35 * DNIS:2739900 * CSID:9544890332 * DURATION (mm-ss):05-36

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M.K. SILVERMAN+ASSOC

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CERTIFICATE OF SERVICE

I hereby certify that on December 27, 2012, this **SUPPLEMENTAL RESPONSE TO OFFICIAL ACTION UNDER 37 CFR 1.945** was served on Gary Clark, Esq., SHEPPARD, MULLIN, RICHTER & HAMPTON LLP, 333 South Hope Street, 48th Floor, Los Angeles, California 90071 by E-mail and by depositing a copy in the mail, First Class Mail, postage prepaid.


Melvin K. Silverman

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PAGE 5/20 * RCVD AT 12/27/2012 5:19:19 PM [Eastern Standard Time] * SVR:W-PTOFAX-001/35 * DNIS:2739900 * CSID:9544890332 * DURATION (mm-ss):05-36

A1266

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Control No.:	95/002,049	Confirm No. 5600
Patent No.:	7,128,660	
Issued:	October 31, 2006	
Title:	METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM	
Inventor:	John P. Gillig	
Docket No.:	0EKM-168548	
Date:	January 22, 2013	

**THIRD PARTY REQUESTER'S COMMENTS AFTER PATENT OWNER'S
RESPONSE TO OFFICIAL ACTION UNDER 37 C.F.R. § 1.945**

Attn: Mail Stop "Inter Partes Reexam"
Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir,

Third Party Requester, Taylor Made Golf Company, Inc. ("Taylor Made"), hereby submits its comments after Patent Owner's RESPONSE TO OFFICIAL ACTION UNDER 37 C.F.R. 1.945 ("Response") pursuant to 37 C.F.R. § 1.947, regarding the *inter partes* reexamination of U.S. Patent No. 7,128,660 ("the '660 patent") entitled "Method Of Golf Club Performance Enhancement And Articles Resultant Therefrom."

I. Introduction

In the Office Action mailed September 25, 2012 ("Office Action"), the Examiner rejected claims 1-6, 8, 10-14 and 16-19 of the '660 patent as follows: (1) claims 1-6, 8, 10-14 and 16-19 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,447,309 to Vincent ("Vincent") (Ground No. 1); (2) claims 1-6, 8, 10-14 and 16-19 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,911,638 to Parente ("Parente") ("Ground No. 2); (3) claims 1-6, 8, 10-14 and 16-19 were rejected under 35 U.S.C. § 102(e) as anticipated

by U.S. Patent No. 7,004,852 to Billings (“Billings”) (Ground No. 4); and (4) claims 1-6, 8, 10-14 and 16-19 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 7,166,040 to Hoffman et al. (“Hoffman”) (Ground No. 5).

As discussed in detail below, all of the limitations of claims 1-6, 8, 10-14 and 16-19 of the '660 patent are disclosed or taught by each of the prior art references. Additionally, the Patent Owner has failed to establish an earlier date of invention under 37 C.F.R. § 1.131. Accordingly, the Examiner should sustain the rejections of claims 1-6, 8, 10-14 and 16-19 of the '660 patent under Ground Nos. 1, 2, 4 and 5.

II. The Examiner Should Sustain The Rejection Of Claims 1-6, 8, 10-14 and 16-19 Under 35 U.S.C. § 102(b) As Invalid Over Vincent (Ground No. 1)

A. The Patent Owner's Response Improperly Compares the '660 Patent's Disclosure to Vincent's "Invention"

Throughout its Response, the Patent Owner's arguments focus on purported features of its claimed invention such as the “system” (Response, p. 3), the “concept” (*id.*, p. 4), the “technology” (*id.*), the “strategies” (*id.*, pp. 5 & 10), and the “performance-enhancing benefits” (*id.*, p. 12). Noticeably absent from the Patent Owner's response, however, is discussion of how these purported features are specifically captured in the claims. To the extent that the Patent Owner does refer to the claims, it tends to misconstrue them or to assume the existence of claim limitations that are simply not there.

The Patent Owner's attempts to distinguish over Vincent are also improper. The Patent Owner not only fails to tie its arguments about Vincent to specific limitations in the '660 patent's claims, it tries to *limit* consideration of Vincent to what the Patent Owner characterizes as “Vincent's invention” rather than Vincent's disclosure. (*See, e.g.*, Response, pp. 6-8.)¹ Even then, the Patent Owner tends to mischaracterize the features that Vincent claims as his invention.

¹ To be sure, the claims of a reference are part of its specification (*see* 35 U.S.C. § 112(b)), and therefore included within its disclosure. *See In re Benno*, 768 F.2d 1340, 1346, 226 USPQ 683, 686 (Fed. Cir. 1985) (“[I]t is true ... that ‘a claim is part of the disclosure ...’”). Just as clearly, the claims do not limit the scope of the reference's disclosure. *See In re Lemelson*, 397 F.2d

For example, the Patent Owner argues that “Vincent’s invention ... is not a hollow club.” (Response, p. 3.) Yet, there is nothing in the ’660 patent claims requiring a hollow club. At most the claims require a “void space” located somewhere behind the face plate and above the sole portion of the club. Moreover, contrary to the Patent Owner’s assertion, Vincent not only discloses, but *claims* a hollow club as an element of his invention, as discussed below.

Similarly, the Patent Owner further argues that: (a) Vincent “is not end user adjustable, and does not even purport to provide a volumetric weighting system” (Response, p. 3); (b) “Vincent lacks the peripheral weighting strategy claimed by the ’660 patent” (*id.*, p. 6); (c) there is a “fundamental distinction (peripheral versus interior) in [the] weighting strategy of Vincent to that of the ’660 patent [which] lies in Vincent’s *simulation* of internal weighting by use of a virtual inclined plane which Vincent purports to exist at the line marked P1 in Figs. 8, 10 and 12 or along the diagonal line marked P2 in Figs. 16 and 20” (*id.*, pp. 6-7, original emphasis); and (d) there are limits on Vincent’s weighting capabilities as compared to the weighting capabilities disclosed in the specification of the ’660 patent (*id.*, pp. 7-9). These arguments lack merit for at least the reason that they fail to cite to limitations in the ’660 patent claims, and further because many of them mischaracterize Vincent’s disclosure.

The Patent Owner’s arguments amount to nothing more than an improper attempt to distinguish Vincent by relying on the ’660 patent’s disclosure rather than its claims. Yet, it is fundamental that a proper invalidity analysis involves a comparison of the claims of the ’660 patent with the disclosure and teachings of the prior art. *Genetics Institute v. Novartis Vaccines*, 655 F.3d 1291, 1302, 99 USPQ.2d 1713, 1722 (Fed. Cir. 2011) (“Anticipation and obviousness require the court to compare the properly construed claims to the available prior art.”) The ’660 patent claims do not recite a “hollow” club head, “end user adjustable” weights², a “volumetric weighting system,” or “peripheral weighting.” Further, nothing in the claims

1006, 1009, 158 USPQ 275, 277 (1968) (“The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain.”)

² Although none of the claims of the ’660 patent recite “end user adjustable” weights, dependent claims 3, 4, 6, 16 and 18 recite “golfer replaceable” weighting elements. As discussed in section II.A.2., *supra*, Vincent teaches golfer replaceable weighting elements.

precludes the weights from being located within a plane within the golf club head as in Vincent. Thus, the Patent Owner's arguments are irrelevant, as discussed in more detail below.

1. *Vincent teaches a club head having a "void space"*

The Patent Owner argues that Vincent fails to teach a hollow club head. (Response, pp. 3-5 and 8.) However, as discussed above, the claims of the '660 patent do not recite a hollow club head. Rather, independent claims 1 and 11 recite a club heading having a "void space behind a face plate of said club head and above a sole portion thereof." (*E.g.*, '660 patent, col. 7, lines 46-47 & col. 8, lines 56-57.)

As detailed in Taylor Made's REQUEST FOR *INTER PARTES* REEXAMINATION OF U.S. PATENT NO. 7,128,660 ("Request"), Vincent teaches a golf club head comprised of a shell comprising a hitting surface and "formed by a metallic or a plastic envelope or shell...and is constituted by an assembly of walls, an upper wall 5, a lower wall 6, a peripheral wall 7 and a front wall 8." (Vincent, col. 6, lines 17-25.) Vincent further teaches that the different walls of the club head "form a closed ***hollow*** body, constituting an internal cavity 9." (*Id.*, col. 6, lines 25-27, emphasis added.). This is consistent with the claims of Vincent, which recite "an assembly of metallic walls constituting a hollow body" (claim 5) and "the golf club head comprises a hollow body comprised of a plurality of walls" (claim 6). Thus, it is clear that the golf club head taught in Vincent has a "void space" behind the front wall 8 ("face plate") and above a lower wall 6 ("sole portion").

On pages 5 and 8 of the Response, the Patent Owner tries to rely on Vincent's teaching of filling his internal cavity 9 with foam to argue that Vincent's club head is not hollow and does not have a void space. The Patent Owner's position does not withstand scrutiny. Vincent's actual teaching is that the "internal cavity 9 is ***advantageously*** filled with foam 10, such as for example a polyurethane foam." (Vincent, col. 6, lines 27-28, emphasis added). Clearly this merely refers to Vincent's preferred embodiment. Consistent with that, Vincent explicitly claims a hollow body, and ***none*** of his claims recite a foam filling.

The Federal Circuit has made clear that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments. *Merck & Co., Inc. v. Biocraft Laboratories*, 874 F.2d 804, 807, 10 USPQ 1843,

1846 (Fed. Cir. 1989) (“the fact that a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered’,” (citing *In re Lamberti*, 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976)). See also MPEP § 2123. Patents are relevant as prior art for all that they contain. *Id.*; *Lemelson*, *supra*, 397 F.2d at 1009, 158 USPQ at 277. Thus, Vincent teaches a “void space.”

2. *Vincent teaches “golfer replaceable” weighting elements*

The Patent Owner also argues that Vincent “provides no weighting elements that are adjustable by the end user.”³ (Response, p. 5.) The Patent Owner explains that

The presence of a foam, such as polyurethane (Col. 6, Ln. 28) within the head, precludes end-user adjustability even if a means of user adjustment of the weights 11, 12, and 13 were taught. The head of Vincent, once filled, cannot be re-filled afterwards.

(*Id.*, original emphasis.) The Patent Owner further argues that the presence of “filling material” would “render impossible the practice of the end-use weighting strategies of the '660 patent.” (*Id.*, p. 8.) Again, the Patent Owner is mistaken.

As discussed in section II.A.1., *supra*, the teaching in Vincent that its club head is “advantageously” filled with foam is merely a preferred embodiment and does not take away from the fact that Vincent specifically discloses (and claims) a club head that is hollow.

Moreover, Vincent discloses that weights 11, 12, 13 may have equal or different masses (col. 7, lines 1-16), and further that the weights may be “separate from the head and ... attached” to the golf club head in the form of the screw weights as shown in Fig. 25 (*id.*, col. 8, lines 3-6). Persons skilled in the art clearly would understand that the screw weights could be readily replaced and/or adjusted (*e.g.*, substituting equal or different masses, as taught by Vincent) by a golfer using a screwdriver or similar tool.

³ The Patent Owner is presumably referring to dependent claims 3, 4, 6, 16 and 18 of the '660 patent, which recite that the “weighting means” are “golfer-replaceable elements.”

B. Vincent Teaches a Golf Club Head Having “at Least One Weighting Means Thereof [That] is Not Contiguous to Any Part of Said Face Plate and a Selected Value of Y in Any One of Said Strategies Does Not Equal a Selected Value of Y in a Second Selected Strategy”

On page 6 of the Response, the Patent Owner argues that “[t]he ‘660 patent specifically claims that, with respect to Gillig’s weighting strategies, Y-axis values [sic] be unequal and must not be contiguous with the face plate.” The Patent Owner, however, is mistaken as to the requirements of independent claims 1 and 11 of the ‘660 patent.

Claim 1 of the ‘660 patent recites a “method of enhancing performance of a golf club” comprising the step of

(c) selectably employing two of the following club weighting strategies to said club, in which at least one weighting means thereof is not contiguous to any part of said face plate and a selected value of Y in any one of said strategies does not equal a selected value of Y in a second selected strategy, the strategies comprising....

(‘660 patent, col. 7, lines 60-65.) In other words, claim 1 requires *one* weighting means that is not in actual contact with the face plate *and* that a selected Y-value of one weighting strategy does not equal the selected value of Y in a second selected strategy. It does *not* require that all Y-values of the weights are unequal or that all weights be spaced or not in contact with the face plate. Independent claim 11 also lacks any similar limitations.⁴

As set forth on pages 34-36 of the Request, Vincent satisfies the relevant limitations of independent claim 1. Specifically, in each of Vincent’s four embodiments shown in Figs. 7-22, at least one weight is not contiguous with any part of the face plate, including: (1) weight 11 in the embodiments of Figs. 7-10 & 15-18; and (2) weights 12 and 13 in the

⁴ In connection with its arguments, the Patent Owner states that “claim 11 requires a transition from “a high Y, high Z coordinate to minimize ballooning to a low Y, low Z coordinate.” (Response, p. 6.) Taylor Made does not understand the relevance or reasons for comparing this limitation to the limitations referenced above for claim 1. Taylor Made also notes that the Patent Owner has failed to accurately describe this limitation (step (c) of claim 11).

embodiments of Figs. 11-14 & 19-22. Additionally, in each of the four embodiments of Vincent, a selected value of Y for weight 11 does not equal a selected value of Y for weights 12, 13. (*See* Request, pp. 35-36 & 50.)

Accordingly, Vincent teaches at least one weighting means that is not in contact with the face plate and a weighting strategy employing a weight having a different Y-value than a weighting element employed in a second selected weighting strategy.

C. The “Performance Variations” or Ball Flight Characteristics are Not Claim Limitations

The Patent Owner argues that “[a] fundamental portion of the ‘600 [sic] patent’s independent claims deals with the variable weighting strategies and their effect on ball trajectory” and that the “technology of Vincent thus addresses almost none of the ball performance issues of the ‘660 patent.” (Response, p. 10.) The Patent Owner, however, fails to appreciate that these functional statements in claims 1 and 11 (*e.g.*, to modify backspin, to modify ball flight penetration, to compensate for hook or slice, etc.) merely describe the intended result of placing a “weighting element” at the coordinates specified in the limitation and, therefore, are not claim limitations.

In the ORDER GRANTING REQUEST FOR *INTER PARTES* REEXAMINATION (“Order”), the Examiner made clear that “the placement of the weight for compensation of various ball trajectories, (hook. [sic] slice, etc.) is also purely functional.” (Order, p. 5.) As Taylor Made explained in the Request, if the location of the center of gravity (“CG”) of the golf club head relative to the CG of the golf ball on impact is changed – that is, if the club head’s CG is moved up or down, forward or back, and/or left or right – certain changes in ball flight characteristics naturally occur according to the laws of nature. Simple mechanics dictate the result on ball flight characteristics that follow from these changes in the CG of the club head. These functional statements in the claims thus simply describe the natural result of placing a weighting element at the claimed location and, therefore, are not claim limitations. *Bristol-Myers Squibb v. Ben Venue Labs.*, 246 F.3d 1368, 1375, 58 USPQ.2d 1508, 1513 (Fed. Cir. 2001) (holding that a statement of intended result is not a claim limitation); *Syntex (U.S.A.) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1378, 74 USPQ.2d 1823, 1828 (Fed. Cir. 2005) (the term “in a stabilizing amount” simply

describes the intended result of using the weight to volume ratios recited in the claims). As the court stated in *Bristol-Myers Squibb*, in holding that the terms “for reducing hematologic toxicity” and “an antineoplastically effective amount” were not claim limitations,

The express dosage amounts are material claim limitations; the statement of the intended result of administering those amounts does not change those amounts or otherwise limit the claim.

246 F.3d at 1375, 58 USPQ.2d at 1513.

Regardless, whatever is true of the claimed invention with respect to the placement of weighting elements is also inherently true of the prior art. In other words, to the extent that placing weighting element at the claimed location(s) results in certain ball flight characteristics, the prior art inherently anticipates to the extent it teaches placement of weighting element at the same location(s), even if the prior art does not explicitly recognize or explain the resulting ball flight characteristics. As the Federal Circuit stated in *Atlas Powder Co. v. Ireco, Inc.*, 190 F.3d 1342, 1348-49, 51 USPQ.2d 1943, 1947 (Fed. Cir. 1999):

Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates. Inherency is not necessarily coterminous with the knowledge of those of ordinary skill in the art. Artisans of ordinary skill may not recognize the inherent characteristics or functioning of the prior art. ***However, the discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer.***

(Citations omitted, emphasis added).

Accordingly, the Patent Owner cannot rely on arguments concerning ball flight performance to overcome the rejections based on Vincent.

III. The Examiner Should Sustain The Rejection Of Claims 1-6, 8, 10-14 and 16-19 Under 35 U.S.C. § 102(b) As Invalid Over Parente (Ground No. 2)

A. The Claims do Not Require “Volumetric Weighting” or Weight Adjustment Over the Entirety of the X, Y and Z Axes

On pages 12-17 of the Response, the Patent Owner argues that “Parente does not teach a method of volumetric weighting within a virtual X, Y, Z orthonormal coordinate system.” The Patent Owner claims that

Parente’s teaching is strictly that of a peripheral weighting system, meaning, in the context of the ‘660 patent, that no weighting can be achieved within the central void space of the club, including the crown region, regardless of the weight or length of the screws which are employed. See for example Fig. 2 of Parente, indicating that no weighting of the type shown in Figs. 2 or 6 of the ‘660 patent can be employed. That is, weighting at X2, Y2, and any of Z1, Z2, or Z3 are not possible in Parente. The consequences of this limitation are apparent from Fig. 13 of the ‘660 patent. Basically, all neutral X weighting options of ‘660 cannot exist in Parente.

(*Id.*, p. 12.) The Patent Owner’s arguments are without merit.

As discussed in section II.A., *supra*, the Patent Owner is again making an improper comparison between Parente and the *disclosure* of the ‘660 patent. *Genetics Institute, supra*, 655 F.3d at 1302, 99 USPQ.2d at 1722. Since the claims do not require “volumetric weighting” or the capability of providing or moving a weighting means over the entirety of the range along each axis, the Patent Owner’s arguments are irrelevant.

Independent claim 1 of the ‘660 patent recites selectably employing two weighting strategies to the club, the “strategies comprising: (i) ... providing within said void space weighting means between a low Y, low Z coordinate ... to a high Y, high Z coordinate ... ; (ii) providing within said void space weighting means between a high Y, high Z coordinate ... to a low Y, low Z coordinate ... ; (iii) modifying weighting means substantially within said void space between a low Z-coordinate ... to a high Z-coordinate ... ; or (iv) providing weighting

means substantially within said void space at a low X-coordinate ... to a high X-coordinate” Similarly, independent claim 11 recites providing weighting means substantially within said void space “between a high Y, high Z coordinate ... to a low Y, low Z coordinate” (step (c)) and “between a low X-coordinate ... to a high X-coordinate” (step (d)).

As explained on pages 9-11 of the Request, the broadest reasonable interpretation of these limitations is providing a weighting means in at least one position within the specified range along an axis; in other words, the claims contain no requirement of a capability of providing or moving a weighting means over the entirety of the range. This interpretation is consistent with the disclosure of the '660 patent in that to the extent that the '660 patent supports the entire ranges over the three axes (X, Y and Z), it does so by disclosing different embodiments with weights in various locations. The '660 patent does not disclose any individual embodiment in which weights can be provided at, or moved to, any location in the club head over the entire range, from lowest to highest, along all three axes.

Here, Parente discloses using screw weights for *each* Z coordinate, from short screw 14 having a low Z coordinate, to medium screw 16 and long screw 18 spanning a low to medium Z coordinate, to a long screw, up to the maximum permissible length, spanning a low to high Z coordinate.

The Patent Owner argues that Parente fails to teach a weight having a Z3 coordinate because the effective weighting of any long screw would be Z2 since the Z1 and Z3 portions of the screw would cancel each other out with respect to ball flight effect. (Response, pp. 13-14 & 18-19.) Again, this argument lacks merit. First, as discussed above, the claims do not require the capability of providing or moving a weighting means over the entirety of the range. Thus, the relevant claim limitations are satisfied by Parente's teaching of a weight having any Z coordinate. Additionally, as discussed on page 11 of the Request, it is clear from the '660 patent that a claim requirement for a specified coordinate, *e.g.*, a low Z (Z1) coordinate, is satisfied by a weight that spans multiple coordinates including the specified one, *e.g.*, a low to high Z (Z1-Z3) coordinate. Thus, the Patent Owner's arguments concerning the limits on Parente's weighting capabilities with respect to the Z-axis are contradicted by its own patent. (Response, pp. 13-17.)

B. The “Performance Variations” or Ball Flight Characteristics are Not Claim Limitations

On pages 14-19 of the Response, the Patent Owner argues that “there are numerous consequences of the above-limitations of Parente [in terms of golf ball performance].” For example, the Patent Owner argues that “one cannot accomplish an adjustment for medium ballooning, for neutral hook or slice, or for a neutral effect upon backspin.” (Response, p. 19.) The Patent Owner also criticizes Parente’s teaching of screw weights having a mass of 5 grams each, arguing that the screws “could not produce a substantial performance effect upon a modern golf club head which typically is in a range of about 200 grams for a driver.” (Response, p. 17.) The Patent Owner also claims that

Parente, in addition to its above set forth parametric limitations is,
in reality, a system for fine tuning of a golf club head, not one
intended to effect a significant degrees of change of performance.

(*Id.*)

As discussed in section II.C., *supra*, the functional statements recited in claims 1 and 11 (*e.g.*, to compensate for hook or slice) merely describe the intended result of placing a “weighting element” at the coordinates specified in the limitation and, therefore, are not claim limitations. *Bristol-Myers Squibb, supra*, 246 F.3d at 1375, 58 USPQ.2d at 1513; *Syntex (U.S.A.) LLC, supra*, 407 F.3d at 1378, 74 USPQ.2d at 1828. Regardless, whatever is true of the claimed invention with respect to the placement of weighting elements is also inherently true of the prior art. *Atlas Powder Co., supra*, 190 F.3d at 1348-49, 51 USPQ.2d at 1947. Thus, the Patent Owner cannot rely on arguments concerning ball flight performance to overcome the rejection.

On pages 19-21 of the Response, the Patent Owner argues that “Parente’s screw height is a function of screw weight” and that “this adds another limitation to the weighting and therefore performance potential of Parente.” The Patent Owner explains that

since a short screw is always of a lower weight, even if a higher
weight screw is selected, one is faced with a situation in which one
could never obtain a heavier low Z setting, which would

correspond to optimal penetration of ball flight at $Y=3$ and, similarly, one could never obtain a heavy low Z setting in the front of the club ($Y=1$) which would correspond to a maximum ballooning action.

(Response, pp. 19-20.) The Patent Owner adds that “Parente discusses his objectives as ‘fine tuning’” and “makes no claim to an unlimited extent of adjustability” in the golf club.

(Response, p. 21.) Again, none of these arguments have merit.

The Patent Owner is again focused on an improper comparison of the *disclosure* of the '660 patent with the teachings of Parente. *Genetics Institute, supra*, 655 F.3d at 1302, 99 USPQ.2d at 1722. Since the claims of the '660 patent do not require the capability of providing or moving a weighting means over the entirety of the recited ranges along the X, Y and Z axes, the Patent Owner's arguments are irrelevant.

Furthermore, the claims of the '660 patent do not require a “substantial performance effect” or any minimum performance results with respect to the placement of weights in the club head, or even weighting means of a minimum mass. Parente satisfies the limitations of the claims of the '660 patent because it teaches a golf club head having weights in at least one position within each specified range along an axis, as required by the claims.

C. Parente is Prior Art Under 35 U.S.C. § 102(b)

The Patent Owner argues that

Parente also cannot qualify as prior art under 35 U.S.C. § 102(b) since it was issued less than one year before the priority date of May 19, 2000 of the '660 patent, that is, the date of a provisional that matured into U.S. Patent No. 6,538,848 the parent of the '660 patent. As well, the '848 patent teaches perimeter weighting as well as sidewall weighting per the embodiment of Fig. 4, thereof.

(Response, p. 21.) The Patent Owner is mistaken.

The Examiner correctly determined that the claims of the '660 patent are not entitled to an earlier priority date, including the priority date of either the provisional application or U.S. Patent No. 5,538,848 (collectively referred to herein as “the '848 patent”). (Order, p. 2.) The Examiner concluded that “[n]either of the prior applications discloses nor claims the weighting strategies or variety of virtual axes as recited in the claims” (*Id.*)

As explained in the Request, claims 1, 11 and 12 each recite *a range of coordinates* for the weighting means, and claims 2 and 12 (step (e)(ii)) additionally recite weighting means at the extremes of a range. The ranges on all three axes (X, Y and Z) are low to high in a 3x3x3 matrix. The '848 patent does not provide support for claims 1, 2, 11 or 12 of the '660 patent for at least the reason that the '848 patent does not describe positioning weights over the entirety, or at both extremes, of the claimed range of coordinates on each axis. *See Pordy v. Land O'Lakes, Inc.*, 97 Fed. Appx. 921, 929 (Fed. Cir. 2004) (holding that the claims of a CIP patent were not entitled to the earlier filing date of the original parent application because the parent application failed to teach or suggest the entirety of the ranges claimed in the CIP patent).

In all of the embodiments in the '848 patent a weight is *only* added to the golf club head via a modified sole plate. (*See* '848 patent, col. 2, lines 38-60; Fig. 4.) Thus, the location of the weight is limited to a low Z (Z1) coordinate. As described in the Summary of the Invention, the '848 discloses various embodiments for weighting the sole plate, including weighting the sole plate from the club's hosel end (X1) to the toe end (X3). The '848 patent also describes weighting the sole plate against the interior of the face of the club head, so it discloses providing weight at least at a low Y (Y1) coordinate (*id.*, col. 2, lines 41-47), if not over the entire range low Y to high Y. What the '848 patent most clearly and indisputably fails to disclose is positioning weights anywhere in an X-Y plane (a) over the entirety of the Z axis, from a low Z to high Z coordinate, as recited in steps (c)(i)-(iii) of claim 1, step (c) of claim 11, and steps (e)(i) and (iii) of claim 12, or (b) at the extremes of the Z axis, low Z and high Z, as recited in step (c)(v) of claim 2 and step (e)(ii) of claim 12. Contrary to the Patent Owner's arguments (Response, p. 21), the embodiment of Fig. 4 of the '848 fails to show anything other than weighting at a Z1 coordinate.

For these reasons, independent claims 1 and 11, and their respective dependent claims at issue (including claims 2 and 12), manifestly are *not* entitled to the benefit of the filing

date of the '848 patent. *Waldemar Link, GmbH & Co. v. Osteonics Corp.*, 32 F.3d 556, 558, 31 USPQ.2d 1855, 1857 (Fed. Cir. 1994). These claims are only entitled to the filing date of the '660 patent, April 3, 2004. Since Parente issued more than a year before the priority date of the claims of the '660 patent, Parente is prior art under 35 U.S.C. § 102(b).⁵

IV. The Examiner Should Sustain The Rejection Of Claims 1-6, 8, 10-14 and 16-19 Under 35 U.S.C. § 102(e) As Invalid Over Billings (Ground No. 4) And As Invalid Over Hoffman (Ground No. 5)

A. The Claims of the '660 patent are Not Entitled to an Earlier Priority Date

As discussed in section III.C., *supra*, the Examiner correctly determined that the claims of the '660 patent are not entitled to the priority date of the '848 patent because the '848 patent fails to provide support for claims 1, 2, 11 or 12 of the '660 patent. Specifically, the '848 patent does not disclose positioning weights over the entirety, or at both extremes, of the claimed range of coordinates on each axis. Thus, the claims of the '660 patent are only entitled to the filing date of the '660 patent, April 3, 2004.

Since the applications for Billings and Hoffman were filed by another in the United States before the filing of the application for the '660 patent, Billings and Hoffman are prior art under 35 U.S.C. § 102(e)(1).

B. The Patent Owner Has Failed to Successfully Swear Behind Billings or Hoffman Under 37 C.F.R. § 1.131

The Patent Owner submitted a DECLARATION UNDER 37 C.F.R. 1.131 AND 1.132 ("Gillig Decl.") attempting to establish a date of invention prior to the filing date of Billings and Hoffman. The application for Billings was filed in the United States on January 10, 2002, while the application for Hoffman was filed in the United States on February 23, 2004. Incredibly, the Patent Owner is apparently attempting to establish a date of invention as early as 1998-1999. (Response, pp. 22 & 29-32; Gillig Decl., ¶¶ 6, 7, 11 & 12.) This date is well prior to the earliest

⁵ It is unclear whether the Patent Owner is attempting to swear behind Parente under 37 C.F.R. § 1.131. Regardless, Parente is prior art under Section 102(b), a statutory bar, and thus the Patent Owner is precluded from attempting to swear behind Parente. See 37 C.F.R. § 1.131(a)(2).

possible priority date of the Patent Owner's own '848 patent (May 19, 2000) and more than *six years* before the filing date of the '660 patent.

As explained below, the Patent Owner has failed in its attempt to establish invention of the subject matter claimed in the '660 patent prior to the filing dates of Billings or Hoffman.

1. *The requirements for establishing prior invention under 37 C.F.R. § 1.131*

37 C.F.R. § 1.131 provides that a party, in certain circumstances, may establish, by a showing of fact, invention prior to a reference applied in a rejection and thus remove that reference as available prior art. Specifically, Section 1.131 provides in pertinent part:

(a) When any claim of an application or a patent under reexamination is rejected, the inventor of the subject matter of the rejected claim, the owner of the patent under reexamination, or the party qualified under §§ 1.42, 1.43, or 1.47, may submit an appropriate oath or declaration to establish invention of the subject matter of the rejected claim prior to the effective date of the reference or activity on which the rejection is based

(b) The showing of facts shall be such, in character and weight, as to establish reduction to practice prior to the effective date of the reference, or conception of the invention prior to the effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the application. Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration or their absence must be satisfactorily explained.

Thus, under Section 1.131, a patent owner must either establish reduction to practice prior to the effective date of the reference or conception of the invention prior to the effective date coupled with due diligence from prior to the date of the reference to the constructive or actual reduction to practice of the claimed invention.

2. *The Patent Owner has failed to show reduction to practice of the claimed invention prior to the filing dates of Billings or Hoffman*

In order to establish actual reduction to practice, the inventor must prove that he constructed an embodiment or performed a process that met all the limitations of the claim, and that he determined that the invention would work for its intended purpose. *Cooper v. Goldfarb*, 154 F.3d 1321, 1327, 47 USPQ2d 1896, 1901 (Fed. Cir. 1998). Determining that the invention will work for its intended purpose may require testing, depending on the character of the invention and the problem that it solves. *Id.* “The adequacy of a reduction to practice is to be tested by what one of ordinary skill in the art would conclude from the results of the tests.” *Winter v. Lebourg*, 394 F.2d 575, 581, 157 USPQ 574, 578 (CCPA 1968). To prove reduction to practice by inventor testimony, the inventor’s testimony must be corroborated by independent evidence. *See Cooper, supra*, 154 F.3d at 1330, 47 USPQ2d at 1903.

The Gillig Decl. fails to present any evidence that Mr. Gillig actually reduced the *claimed* invention to practice. First, Mr. Gillig never actually states that he reduced the invention to practice or that it worked for its intended purpose. Although the declaration discusses and includes photographs of “prototypes” (Gillig Decl., ¶¶ 9-13 & Exh. E, F & G), Mr. Gillig never actually explains how these prototypes satisfy *each* of the limitations recited in the claims. For example, with respect to Exhibit G, Mr. Gillig simply states that “[t]hese were inserts used in prototypes of my hollow golf clubs to achieve different weighting coordinates and effects.” (*Id.*, ¶11.) At one point, in describing “Prototype B” (Ex. G), Mr. Gillig actually states that “weighting in different of the above-referenced 27 points or locations of the hollow of a golf club head *might* [be] accomplished.” (*Id.* emphasis added.)

Accordingly, the Gillig Decl. is void of any evidence proving that Mr. Gillig actually constructed an embodiment that met all of the limitations of the claims and was determined to work for its intended purpose. *See Cooper, supra*, 154 F.3d at 1330, 47 USPQ2d at 1903. Thus, the Patent Owner has failed to show reduction to practice of the claimed invention prior to the filing dates of Billings or Hoffman.

3. *The Patent Owner has failed to establish conception of each limitation of the claimed invention*

In order to prove conception, the oath or declaration must “establish invention of the *subject matter of the rejected claim* prior to the effective date of the reference.” 35 U.S.C. § 1.131(a) (emphasis added). “[T]he record must show that the inventors themselves had a permanent idea of *every feature of the claimed invention* and provide corroborating evidence that would enable one of ordinary skill in the art to make the invention.” *Ex Parte Olchanski et al.*, Appeal No. 2010-1333 at p. 5, 2012 WL 5872286 at *3 (BPAI Nov. 20, 2012) (emphasis added). *See also, Kridl v. McCormick*, 105 F.3d 1446, 1449, 41 USPQ2d 1686, 1689 (Fed. Cir. 1997) (“Conception must include every feature or limitation of the claimed invention.”). Conception also turns on the inventor’s ability to describe the invention with particularity, and the idea must be sufficiently formed so that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation. *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1228, 32 USPQ2d 1915, 1919 (Fed. Cir. 1994). Further, conception must be proved by corroborating evidence which shows that the inventor disclosed to others his “completed thought expressed in such clear terms as to enable those skilled in the art” to make the invention. *Coleman v. Dines*, 754 F.2d 353, 359, 224 USPQ 857, 862 (Fed. Cir. 1985).

The Gillig Decl. fails to address *any* of the specific limitations of claims 1-6, 8, 10-14 and 16-19 of the '660 patent, as required by Section 1.131. The Gillig Decl. includes a haphazard discussion of the “concept” or “idea” of the invention *disclosed* in the '660 patent, but fails to address the invention as *claimed*. For example, the declaration fails to explain how each of the exhibits attached thereto are relevant to the specific claim limitations, *e.g.*, “selectably employing two of the following club weighting strategies to the club head ... ” or “providing within said void space weighting means between a low Y, low Z coordinate ... to a high Y, high Z coordinate.” In fact, virtually every limitation recited in the claims is absent from the discussion in the Gillig Decl. This is also consistent with the Patent Owner’s own characterization of the declaration as focusing solely on the “concept” of the invention:

[T]here is no question that the concept of Billings as is reflected in both the 1999 sketches of Gillig and his provisional application of

2000, are prior to Billings. And, as well, from the Declaration of Gillig, there is no issue with respect to due diligence from the date of conception to the reduction to practice thereof, at least constructively. Billings was not filed until 2002.

....

Gillig's conception of the invention as claimed, at least by the 1998-1999 period, is many years prior to the effective date of Hoffman or Willits [sic] Accordingly, it is beyond dispute that at least by 1999 Gillig was in possession of the concept of a volumetric coordinate weighting system using exterior ports for providing selectable weights into the hollow interior of a golf club to address specific club performance requirements years prior to Hoffman. His diligence thereafter is also clear from his and the corroborating declarations.

(Response, pp. 22 & 30-31.)

Finally, there is no corroborating evidence of prior conception. The declarations of Trevor Bateman, David Sabre, Robert Toski, and Gary Wiren simply refer to discussions of the concept of an adjustable weight golf club head. The declarations fail to show that Mr. Gillig disclosed to others his "completed thought expressed in such clear terms as to enable those skilled in the art" to make the invention. *Coleman, supra*, 754 F.2d at 359, 857 USPQ at 862.

Accordingly, the Patent Owner has ***not*** established conception of each feature of the claimed invention prior to the filing dates of Billings and Hoffman.

4. *The Patent Owner has failed to establish due diligence from the filing dates of Billings and Hoffman to the filing of the application for the '660 patent*

Pursuant to 37 C.F.R. § 1.131, an inventor must also show due diligence from just prior to priority date of the prior art reference until the claimed invention was reduced to practice. *Hull v. Davenport*, 90 F.2d 103, 105, 33 USPQ 506, 508 (CCPA 1937.) The inventor must also account for the ***entire period*** during which diligence is required. *Gould v. Schawlow*,

363 F.2d 908, 919, 150 USPQ 634, 643 (CCPA 1966) (Merely stating that there were no weeks or months that the invention was not worked on is not enough.); *In re Harry*, 333 F.2d 920, 923, 142 USPQ 164, 166 (CCPA 1964) (statement that the subject matter “was diligently reduced to practice” is not a showing but a mere pleading). A 2-day period lacking activity has been held to be fatal. *In re Mulder*, 716 F.2d 1542, 1545, 219 USPQ 189, 193 (Fed. Cir. 1983) (37 C.F.R. § 1.131 issue). *See also, Fitzgerald v. Arbib*, 268 F.2d 763, 766, 122 USPQ 530, 532 (CCPA 1959) (Less than one month of inactivity during critical period. Efforts to exploit an invention commercially do not constitute diligence in reducing it to practice. An actual reduction to practice in the case of a design for a three-dimensional article requires that it should be embodied in some structure other than a mere drawing.); *Kendall v. Searles*, 173 F.2d 986, 993, 81 USPQ 363, 369 (CCPA 1949) (Diligence requires that applicants must be specific as to dates and facts.).

Since Mr. Gillig did not actually reduce the claimed invention to practice, the due diligence period runs from the filing dates of Billings (January 10, 2002) or Hoffman (February 23, 2004), as the case may be, until the invention was constructively reduced to practice, *i.e.*, the filing date of the application for the '660 patent. In other words, the Patent Owner must show ***acts of continuous diligence over a four to six year period***. The Patent Owner has clearly failed to make any such showing.

Mr. Gillig alleges that he first conceived the concept or idea of his invention in or around 1998-1999. (Gillig Decl., ¶¶6, 11, 12, 19.) Mr. Gillig also states that a provisional application (on which he later filed an application that issued as the '848 patent) was completed on May 19, 2000 (*id.*, ¶21), but admits that the application “did not conceptualize the entire scope of my invention as it had been development and presented” to the attorney “in the manner of my later patent lawyer Melvin K. Silverman, whom I retained at the end of the year 2003, was able to express in my later issued Patent Numbers 7,128,660; 7,854,667; and 8,142,308.” (*Id.*, ¶24.) Mr. Gillig, however, fails to explain ***any*** type of diligence prior to April 3, 2004 (the filing date of the application for the '660 patent).

The Patent Owner also submits declarations under 37 C.F.R. § 1.131 from third party witnesses attempting to corroborate Mr. Gillig’s conception of the “concept” of his

invention in or around 1998 and 1999. Again, however, these declarations fail to explain any due diligence during the relevant time period.

Accordingly, the Patent Owner has failed in its attempt to establish a date of invention prior to the filing dates of Billings and Hoffman. Thus, Billings and Hoffman are prior art to the claims of the '660 patent under 35 U.S.C. § 102(e)(1).

C. The Examiner Should Sustain the Rejection of Claims 1-6, 8, 10-14 and 16-19 Under 35 U.S.C. § 102(e) as Invalid Over Billings (Ground No. 4)

1. *Billings satisfies the limitations of the '660 patent claims*

On pages 23-25 of the Response, the Patent Owner attempts to overcome the substantive rejection of the claims of the '660 patent over Billings on several grounds. As explained below, these arguments lack merit.

First, the Patent Owner argues that “a considerable number (about 35%) of the weight strips of Billings are continuous with the inside of the front face of the head, thereby avoiding the claims of '660.” (Response, p. 23.) The Patent Owner is apparently alluding to the requirement of independent claim 1 that “at least one weighting means thereof is not contiguous to any part of said face plate,” and the requirement of dependent claim 13 that “any selected value of Y of Step (e) [of claim 12] is not contiguous with any part of said face plate.” These claims, however, require only *one* weighting means to not be contiguous with any part of the face plate. As explained on pages 74 and 83 of the Request, Billings' weights secured at locations 514, 516, 518, 520, 522, 524, 528, 530, 532 are not contiguous with any part of the face plate. (See Billings, col. 3, line 56 – col. 4, line 42; Fig. 5.) Therefore, Billings satisfies those claim limitations.

Second, the Patent Owner argues that Billings “does not recognize nor seek to address any weighting theory or combinations thereof in which weighting at a first Y coordinate location would not be equal to weighting at a second Y coordinate location.” (Response, p. 23.) The Patent Owner states that “strip 520 is at the same Y location as 524, while strip [sic] 518 and 522 also appear to be at the same Y location.” (*Id.*) Again, this argument lacks merit.

As discussed in section II.B., *supra*, claim 1 requires *that a selected Y-value of*

one weighting strategy does not equal the selected value of Y in a second selected strategy. It does *not* require that *all* Y-values of the weights are unequal. As explained in the Request, Billings teaches several weight locations that satisfy this claim requirement. Specifically, the value of Y for the weights secured at weight locations 510, 512, 526 (Y1) does not equal the value of Y for the weights secured at weight locations 530, 532 (Y2) or the weights secured at weight locations 514, 516, 518, 520, 522, 524, 528 (Y3). (Request, pp. 74, 75 & 85.)

Conveniently, the Patent Owner focuses solely on the weight locations having the same Y coordinates, rather than the weight locations having different Y coordinates, in its argument.

Third, the Patent Owner argues that “Billings provides no teaching whatsoever in respect to coordinate specific volumetric weighting within the void space of the club head.” (Response, p. 24.) The Patent Owner further explains that “Billings does not purport to teach a virtual X, Y, Z orthonormal coordinate specific weighting system...” (*Id.*) Again, this argument lacks merit.

As explained on pages 7-9 of the Request, the “virtual X, Y, Z orthonormal coordinate system” recited in step (b) of claims 1 and 11 can be met by various orientations of a club head in the coordinate system. Taylor Made previously explained there may be a limitless number of club head orientations that satisfy this step, which, in turn, may affect the determination of the coordinate positions of any weighting means and whether they satisfy the weighting means coordinate position limitations in the claims. Thus, a “virtual X, Y, Z orthonormal coordinate system” can be applied to any golf club head, including Billings. This is consistent with the Examiner’s finding that “the virtual axes recited are purely functional.” (Order, p. 5.)

Fourth, the Patent Owner argues that “Exh. D1 of Appendix D of the Petition [Request] indicates that all volumetric weighting coordinates are not possible in Billings.” (Response, p. 25.) The Patent Owner further states that “none of the medium X, Y, and Z coordinates can be weighted since all of such positions constitute a complete void space.” (*Id.*) Again, the argument lacks merit.

As explained in section III.A., *supra*, the claims do not require the capability of providing or moving a weighting means over the entirety of the claimed range along the axes.

Rather, the relevant limitations of claims 1, 11 and 12 are satisfied by providing a weighting means in at least one position within the specified range along an axis.

Lastly, on page 24 of the Response, the Patent Owner criticizes the citation of Billings as prior art to the claims of the '660 patent under 35 U.S.C. § 102(b) when the claims of the U.S. Patent No. 7,854,667 ("the '667 patent"), a continuation of the '660 patent, were allowed in view of Billings as cited art. There is simply no merit to this argument. The '667 patent includes different claims/limitations than that of the '660 patent. For example, each of the claims of the '667 patent recite that "at least one selected weighting element is not contiguous with any inner surface of said void space." ('667 patent, col. 10, lines 3-4, 66-67 and col. 12, lines 26-27.) Billings teaches that its weights are directly secured to the inner surface of the void space, thus failing to teach this limitation of the claims of the '667 patent.

2. *The Patent Owner cannot compare the disclosure of the '660 patent with the teachings of Billings*

As it has done throughout the Response, the Patent Owner again improperly compares the **disclosure** of the '660 patent with the teachings of Billings. (Response, pp. 26-28.) For Example, the Patent Owner states that

As the '660 patent notes at Col. 2, Lns. 63-67, it is an object of the method to provide "a weight modifiable club head, inclusive of interchangeable sole plates and/or weighting elements, which express a universal method of golf club head modification to account for ball backspin, penetration, trajectory, and hook or slice." See also Col. 2, Lns. 1-5 of '660. Billings, clearly, is not a universal method of modifying golf club performance at least since it is unable to access the entire hollow interior of the club. It is vastly different in concept and, as such, it is difficult to conceive that one of skill in the art, by simply reading Billings, could derive the sophisticated volumetric, coordinate-specific combinations of weighting methods of the '660 patent as claimed.

(Response, p. 26.) The Patent Owner's discussion is entirely irrelevant as it fails to compare the *claims* of the '660 patent with the disclosure and teachings of Billings. *Genetics Institute, supra*, 655 F.3d at 1302, 99 USPQ.2d at 1722.

3. Billings teaches golfer-adjustable weighting elements

The Patent Owner also criticizes Billings for allegedly lacking "user adjustability" of its weights. (Response, pp. 26-27.) The Patent Owner claims that

The apparent teaching of Billings is that once the strips have been placed in their desired location, crown portion 114 is secured to sole and wall portion 112 (see Fig. 5) and, thereafter, the only adjustability in the future that might be possible is through weighting port cover 120. In other words, how a user might reposition the top weighting strips of Billings after they have been secured to the crown portion 114 is not disclosed in the specificationAs is apparent in the illustration of Fig. 5, once the upper weighting strips, during the construction of the club head, are positioned, there is no manner in which such weighting strips could be repositioned after the crown portion 114 is welded or otherwise permanently secured to the sole or wall portion 112, since the weighting port cover 120 would remain as the only means of access to the interior of the club head.

(*Id.*) This is an incredible misreading of Billings.

The Summary section of Billings states that "the present invention provides a golf club that allows a *user* to customize the location of the center of gravity" and that "the weighting port cover allows a *user* to place weighting material inside the golf club head, thereby adjusting or customizing the location of the center of gravity." (Billings, col. 2, lines 8-14.) Billings nowhere suggests that any of the weighting material is placed in the golf club head before the crown portion 114 is secured to the sole and wall portion 112. Nor does Billings suggest any limits on where weighting material can be placed via the weighting port cover 120. One of

ordinary skill clearly would understand that all weighting material is intended to be placed inside the golf club head via removal of the weighting port cover 120.

Moreover, the only weighting material disclosed in Billings is lead tape (col. 2, lines 12-13 and 51-54), which clearly is readily removable and repositionable by a golfer. Such repositioning of weighting material is clearly contemplated by Billings' statement that the weights are "customizable and can be altered to suit changing course conditions, weather conditions, and other user requirements." (Col. 1, lines 8-10.) Implicit in this teaching is that a user can adjust the location of each of the weights as necessary.

Lastly, the claims of Billings specifically recite "each of said weights being *interchangeably repositionable by the user* at each of said locations."⁶ (Col. 5, lines 35-36; col. 6, lines 1-2, 30-31, 5& 5-56, emphasis added.) Thus, persons skilled in the art would readily understand that Billings teaches that its weights are "golfer-replaceable." The Patent Owner's argument that "this cannot be true" is preposterous. (Response, p. 27.)

Additionally, Billings teaches that "the placement and size of the weighting port is shown for illustrative purposes only" and that "the weighting port may be of a different shape and/or there may be a different method of accessing the interior of the club head, such as removing the sole of the club head, the back of the club head, or the like." (*Id.*, col. 2, lines 52-62.) There is simply no merit to the argument that the weights in certain portions of Billings' golf club head could not be accessed by a user or golfer after their initial placement.

4. The ball flight characteristics are not claim limitations

The Patent Owner also tries to overcome the rejections based on Billings by arguing that "all of the potential adjustments achievable by the teachings of Billings relate only to adjustments of spin and trajectory" and that Billings fails to teach "any of the parameters of adjustment of hook, slice, degree of backspin or ballooning that can be addressed by the

⁶ This claim limitation was added to Billings' claims in an amendment during prosecution of the application. However, the fact that this amendment was allowed establishes that the original application provided support for this limitation since the amended claims were not rejected under 35 U.S.C. § 112, nor were they rejected for adding new matter under 35 U.S.C. § 132.

'660 patent.” (Response, pp. 27-28.) Again, for the reasons discussed in section II.C., *supra*, these arguments lack merit because the functional language regarding ball flight effects are not claim limitations. *Bristol-Myers Squibb, supra*, 246 F.3d at 1375, 58 USPQ.2d at 1513; *Syntex (U.S.A.) LLC, supra*, 407 F.3d at 1378, 74 USPQ.2d at 1828. Regardless, whatever is true of the claimed invention with respect to the placement of weighting elements is also inherently true of the prior art. *Atlas Powder Co., supra*, 190 F.3d at 1348-49, 51 USPQ.2d at 1947. Thus, the Patent Owner cannot rely on arguments concerning ball flight performance to overcome the rejection.

D. The Examiner Should Sustain the Rejection of Claims 1-6, 8, 10-14 and 16-19 Under 35 U.S.C. § 102(e) as Invalid Over Hoffman (Ground No. 5)

The Patent Owner has not made *any* attempt to overcome the substantive rejection of claims 1-6, 8, 10-14 and 16-19 of the '660 patent under Section 102(e) as anticipated by Hoffman. The Patent Owner's arguments rest solely on its unsuccessful attempt to establish an invention date earlier than Hoffman under 37 C.F.R. § 1.131. The Patent Owner explains that it “does not question the functionality of Hoffman but, rather, that 35 U.S.C. 102(e) cannot be properly applied since Hoffman was not the first to invent either a port weighting system or Gillig's invention as claimed.”⁷ (Response, p. 32.)

For the reasons discussed in section IV.B., *supra*, the Patent Owner has failed in its attempt to swear behind Hoffman under 37 C.F.R. § 1.131 and, therefore, Hoffman remains prior art to the claims of the '660 patent. Accordingly, for the reasons set forth on pages 5-6 of the Office Action and pages 29-31 and 73-98 of the Request, claims 1-6, 8, 10-14 and 16-19 of the '660 patent are invalid under 35 U.S.C. § 102(e) as anticipated by Hoffman.

⁷ The Patent Owner presumably chose not to challenge the substantive rejection of the claims based on Hoffman because Hoffman is based on one of Taylor Made's golf clubs that the Patent Owner has charged with infringement in the co-pending litigation between the parties. If it had challenged the rejection, the Patent Owner would have had to make the same argument with respect to Hoffman that it made for the other references, *i.e.*, that Hoffman lacks the capability of providing or moving a weighting means over the entirety of the range along each axes. For example, the golf club head in Hoffman fails to teach weighting elements having at least a Z2 or Z3 coordinate. The Patent Owner presumably did not want to shoot itself in the foot with respect to its infringement claims.

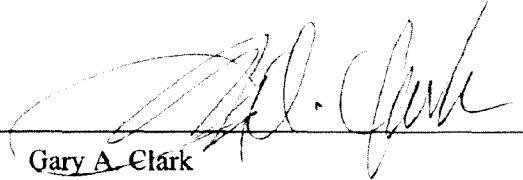
V. Conclusion

For the reasons set forth above and in the Request, Taylor Made respectfully requests the Examiner to maintain the rejections in the Office Action of claims 1-6, 8, 10-14 and 16-19 of the '660 patent. Since the Patent Owner has failed to rebut the rejections set forth in the Office Action, Taylor Made respectfully requests the Examiner to issue an Action Closing Prosecution.

Respectfully submitted,

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

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CERTIFICATE OF SERVICE

This is to certify that I have this day, January 22, 2013, caused to be served a copy of the foregoing THIRD PARTY REQUESTER'S COMMENTS AFTER PATENT OWNER'S RESPONSE TO OFFICIAL ACTION UNDER 37 C.F.R. § 1.945 by placing a copy in the United States Mail, postage pre-paid, addressed to Melvin K. Silverman, Esq., M. K. Silverman & Associates, P.C., 500 West Cypress Creek Road, Suite 350, Ft. Lauderdale, Florida 33309, with a copy to Melvin K. Silverman, Esq., M. K. Silverman & Associates, P.C., One Gateway Center, Ste. 2600, Newark, New Jersey 07102.



Betty Rodriguez

Acknowledgement Receipt

The USPTO has received your submission at **16:59:36** Eastern Time on **22-JAN-2013**.

No fees have been paid for this submission. Please remember to pay any required fees on time to prevent abandonment of your application.

eFiled Application Information

EFS ID	14760533
Application Number	95002049
Confirmation Number	5600
Title	METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM
First Named Inventor	7128660
Customer Number or Correspondence Address	27353
Filed By	Gary Alan Clark/Betty Rodriguez
Attorney Docket Number	0EKM-168548
Filing Date	20-JUL-2012
Receipt Date	22-JAN-2013
Application Type	inter partes reexam

Application Details

Submitted Files	Page Count	Document Description	File Size	Warnings
168548- 3rdPartyComments.PDF	27		452657 bytes	◆ PASS
		Document Description	Page Start	Page End
		Third Party Requester Comments after Non- final Action	1	26
		Reexam Certificate of Service	27	27

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/002,049	07/20/2012	7128600	01-KM-108548	5600

27353	7590	05/14/2013
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EXAMINER	
GRAHAM, MATTHEW C	

ART UNIT	PAPER NUMBER
3903	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Transmittal of Communication to Third Party Requester <i>Inter Partes</i> Reexamination	Control No.	Patent Under Reexamination	
	95/002,049	7128660	
	Examiner	Art Unit	
	MATTHEW C. GRAHAM	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

____ (THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS) ____

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
12275 EL CAMINO REAL, SUITE 200
SAN DIEGO, CA 92130

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

ACTION CLOSING PROSECUTION (37 CFR 1.949)	Control No.	Patent Under Reexamination
	95/002,049	7128660
	Examiner	Art Unit
	MATTHEW C. GRAHAM	3993

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Responsive to the communication(s) filed by:

Patent Owner on 27 December, 2013

Third Party(ies) on 22 January, 2013

Patent owner may once file a submission under 37 CFR 1.951(a) within 1 month(s) from the mailing date of this Office action. Where a submission is filed, third party requester may file responsive comments under 37 CFR 1.951(b) within 30-days (not extendable- 35 U.S.C. § 314(b)(2)) from the date of service of the initial submission on the requester. **Appeal cannot be taken from this action.** Appeal can only be taken from a Right of Appeal Notice under 37 CFR 1.953.

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

PART I. THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892
2. ☐ Information Disclosure Citation, PTO/SB/08
3. ☐ _____

PART II. SUMMARY OF ACTION:

- 1a. ☒ Claims 1-6,8,10-14 and 16-19 are subject to reexamination.
- 1b. ☒ Claims 7, 9 and 15 are not subject to reexamination.
2. ☐ Claims _____ have been canceled.
3. ☐ Claims _____ are confirmed. [Unamended patent claims]
4. ☐ Claims _____ are patentable. [Amended or new claims]
5. ☒ Claims 1-6,8,10-14 and 16-19 are rejected.
6. ☐ Claims _____ are objected to.
7. ☐ The drawings filed on _____ ☐ are acceptable ☐ are not acceptable.
8. ☐ The drawing correction request filed on _____ is: ☐ approved. ☐ disapproved.
9. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d). The certified copy has:
☐ been received. ☐ not been received. ☐ been filed in Application/Control No _____
10. ☐ Other _____

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ACTION CLOSING PROSECUTION

1. Receipt is acknowledged of the response and amendment by the Patent Owner on 12/7/2012, including the Declarations by Gillig, Bateman, Wiren, Sabre and Toski. Receipt is also acknowledged of the reply by the Third Party Requester on 1/22/2013.

2. **Ground #1** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Vincent.

A detailed analysis as to how Vincent shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix A) and is hereby incorporated by reference.

Specifically, Vincent discloses four embodiments of a golf club head having three peripheral weights 11, 12, 13. Vincent teaches that the centers of gravity of the weights form a triangle, and that the "weights are located substantially in a weight plane which is inclined with respect to the plane of the ground when the head rests on the ground." (See col. 2, lines, 30-33.) Vincent discloses two embodiments in which the inclined weight plane extends from the upper-front to the lower-rear of the golf club head (Figs. 7-10 & 11-14), and two embodiments in which the inclined weight plane extends from the lower-front to the upper-rear of the golf club head (Figs. 15-18 & 19-22). Vincent discloses that the weights 11, 12, 13 may be "separate from the head and are attached" to the golf club head in the form of screw weights. (See col. 8, lines 3-6 and Fig..25.) At

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least one of these weights 11 is in a void space and not contiguous with the front face of the club head.

3. **Ground #2** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Parente.

A detailed analysis as to how Parente shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix B) and is hereby incorporated by reference. Specifically, Parente discloses the use of screws 14, 16, 18 as weights in a golf club head. The screws are received in through bores 43, 44, 45 in the sole plate 12 and into threaded bores 40, 41, 42 in the body 10. (See col. 3, lines 40-44 and Figs. 1-4.). Parente provides a "number of different sets of screws of different lengths, and thus different weights." (See col. 3, lines 49-50.) Parente states that "the only limitation on maximum screw length is the height of the cavity itself" (See col. 4, lines 62-63), thus teaching use of a longer screw weight, up to the maximum permissible length.

The screws are used to adjust weighting in the club head and thereby alter the center of gravity and performance of the golf club. (See col. 1, lines 28-67; col. 4, lines 8-33.)

"The screws can be changed quickly and easily as desired to adjust head weight and weight distribution, allowing a head to be finely tuned to a particular golfer's requirements." (See col. 2, lines 37-41.)

In one example, Parente discloses providing seven different sets of screws. "Any screw from any of the seven sets may be used at any of the three positions, providing a

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very large number of possible different weight distributions, and a large degree of adjustability in the same club head, while maintaining an optimum total weight. By using different screw weights at the different positions, the position of the center of gravity as well as the size of the sweet spot, and the overall 'feel' and playing characteristics of the club can be readily adjusted." (See col. 4, lines 16-24.) Parente further discloses that more than three screws can be used in the sole "for an even greater range of weight adjustment." (See col. 4, line 64 - col. 5, line 2.) Parente teaches that "the screws may be changed readily until the optimum weighting for a particular golfer is achieved." Thus, it would be understood that any number of weighting strategies may be employed in Parente's club head. The weights are not contiguous with the face of the golf club head.

4. **Ground #4** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Billings

A detailed analysis as to how Billings shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix D) and is hereby incorporated by reference. Specifically, Billings discloses a golf club head 100 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See, col. 2, lines 8-14.) The golf club head in Billings has an empty internal cavity 118 ("void space") behind the face plate 110 and above a sole portion 112 for placing weighting material within the internal cavity of the club head. (See col. 2, lines 45-49.) Billings discloses a golf club head having a removable port cover 120 for accessing the interior cavity 118 for placement of weighting material, such

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as lead tape, into the interior cavity. (See col. 2, lines 51-54.) The placement of weighting material allows a user to adjust or customize the location of the center of gravity of the golf club head. "FIG. 5 illustrates the hollow golf club head 100 with the crown portion 114 separated from the sole and wall portion 112 and rotated to face the inner wall towards the reader in order to illustrate potential placements of weighting material." (See col. 3, lines 47-50.) Billings discloses the effects of placing weights in each of the locations shown in Fig. 5. The majority of weight strips are not contiguous with the front face of the head.

5. **Ground #5** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoffman.

A detailed analysis as to how Hoffman shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix E) and is hereby incorporated by reference. Specifically, Hoffman discloses a golf club head 28 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See col. 3, line 58 - col. 4, line 5.) Hoffman's club head 28 includes four recesses 96, 98, 102, 104 formed in the wall of the club head body 92. (See col. 7, lines 36-40.) Each recess is positioned behind the face plate and above a sole portion of the club head. (See Figs. 2-5.) Hoffman's "sole" includes both a curved bottom portion that rests on the ground and a skirt or sidewall portion that is above the ground. Hoffman's recesses 96, 98, 102, 104 are all located in the skirt or sidewall portion and thus not on the sole portion to the degree claimed. The recesses

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are considered to be voids. Hoffman discloses the use of a set of weights 24 including two weight assemblies 30 of about 10 grams and two screw weights 32 of about 2 grams that are sized to be received in any of the four recesses 96, 98, 102, 104 formed in the club head 28. (See col. 3, lines 58-66.) Varying placement of the weights enables the golfer to vary launch conditions in the club head, for optimum distance and accuracy. More specifically, the golfer can adjust the position of the club head's center of gravity, for greater control over the characteristics of launch conditions and, therefore, the trajectory of the golf ball." (See col. 3, line 66 - col. 4, line 5.) Hoffman discloses a wrench by which a golfer can attach and remove weights 24.

CONCLUSION

6. Patent Owner's arguments filed 12/27/2012 have been fully considered but they are not persuasive.

As noted in the Order-- the effective filing date is hereby established as April 3, 2004. US Patent 7,128,660 (application 10/818,899) is a continuation-in-part (CIP) of application 101383,532 (abandoned) which is a CIP of application 091849,522, now US Patent 6,530,848. Neither of the prior applications discloses nor claims the weighting strategies or variety of virtual axes as recited in the claims as discussed below. Accordingly, the earliest effective filing date is filing date of application 10/818,899, which is April 3, 2004. The Declarations filed are insufficient to establish an earlier effective filing date in that there is no discussion of the claimed invention in relation to

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an earlier date. The Examiner concurs with the comments by the Third Party requester on pages 16-20 of the reply filed on 1/22/2013.

The Patent owner argues numerous limitations not found in the claims—such as a hollow club head and a peripheral weighing strategy. These arguments are deemed moot as they relate to unclaimed limitations. As to the user selectable weights, this limitation is not found in the independent claims and the arguments are also deemed moot. The recitation regarding “golfer selectable” elements is found in dependent claims 3, 4, 6, 16 and 18. Patent Owner argues that these “golfer selectable” weights are not found in the cited references. As detailed in the above grounds of rejections, such elements are clearly shown in the art. Vincent discloses that the weights 11, 12, 13 may be “separate from the head and are attached” to the golf club head in the form of screw weights. (See col. 8, lines 3-6 and Fig. 25.) Parente teaches that “the screws may be changed readily until the optimum weighting for a particular golfer is achieved.” Billings discloses a golf club head having a removable port cover 120 for accessing the interior cavity 118 for placement of weighting material, such as lead tape, into the interior cavity. (See col. 2, lines 51-54.) The placement of weighting material allows a user to adjust or customize the location of the center of gravity of the golf club head. Hoffman discloses the use of a set of weights 24 including two weight assemblies 30 of about 10 grams and two screw weights 32 of about 2 grams that are sized to be received in any of the four recesses 96, 98, 102, 104 formed in the club head 28. (See col. 3, lines 58-66.) Varying placement of the weights enables the golfer to vary launch conditions in the club head, for optimum distance and accuracy. More

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specifically, the golfer can adjust the position of the club head's center of gravity, for greater control over the characteristics of launch conditions and, therefore, the trajectory of the golf ball." (See col. 3, line 66 - col. 4, line 5.) Hoffman discloses a wrench by which a golfer can attach and remove weights 24.

As to the arguments relating to performance, these limitations are purely functional and carry no patentable weight. Regarding the weighting strategies, the examiner concurs with the arguments presented by the Third Party Requester, the claims only call for employing two weighing strategies, not all three as argued. Thus if the art meets two of the strategies, then the claim limitations are met. As to the X, Y and Z axes limitations. The claims call for a "virtual" X, Y, Z system. The Examiner concurs with the analysis of the "virtual" axis system as noted in the Request and in the Reply filed on 1/22/2013. Thus, Vincent, Parente, Billings and Hoffman show these virtual axes to the broad degree claimed as laid out in the Request.

Regarding the Declaration by Gillig, the comments and opinions of the inventor are not commensurate with the scope of the claims as discussed above.

7. In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action.

8. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent

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proceeding, involving Patent No. 7,128,660 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2686.

9. Patent owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 CFR 1.530(d)-(j), must be formally presented pursuant to 37 CFR 1.52(a) and (b), and must contain any fees required by 37 CFR 1.20(c).

10. **This is an ACTION CLOSING PROSECUTION (ACP)**; see MPEP § 2671.02.

(1) Pursuant to 37 CFR 1.951(a), the patent owner may once file written comments limited to the issues raised in the reexamination proceeding and/or present a proposed amendment to the claims which amendment will be subject to the criteria of 37 CFR 1.116 as to whether it shall be entered and considered. Such comments and/or proposed amendments must be filed within a time period of 30 days or one month (whichever is longer) from the mailing date of this action. Where the patent owner files such comments and/or a proposed amendment, the third party requester may once file comments under 37 CFR 1.951(b) responding to the patent owner's submission within 30 days from the date of service of the patent owner's submission on the third party requester.

(2) If the patent owner does not timely file comments and/or a proposed amendment pursuant to 37 CFR 1.951(a), then the third party requester is precluded from filing comments under 37 CFR 1.951(b).

(3) Appeal **cannot** be taken from this action, since it is not a final Office action.

11. Any inquiry concerning this communication should be directed to Matthew C. Graham at telephone number 571-272-7116.

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Please mail any communications to:

Attn: Mail Stop "Inter Partes Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria VA 22313-1450

Please FAX any communications to:
(571) 273-9900
Central Reexamination Unit

Please hand-deliver any communications to:

Customer Service Window
Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Matthew C. Graham/

Matthew C. Graham
CRU Examiner
3993
(571) 272-7116

Conferees: /PE/
/BG/

A1307

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENTEE: Gillig
RE-EXAM APPLICATION NO.: 95/002,049
RE-EXAM FILING DATE: 7/20/2012
PATENT NO.: 7,128,660
CONFIRMATION NO.: 5600
ATTORNEY DOCKET NO.: OEM-168548
EXAMINER: Graham

**RESPONSE OF PATENT HOLDER UNDER 37 C.F.R. 951(a) TO ACTION
CLOSING PROSECUTION (ACP)**

Mail Stop: Ex Parte Re-Exam
Central Re-Examination Unit
Hon. Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is the response of Patent Owner Triple Tee Golf, Inc. to the ACP dated May 14, 2013.

1. **The Hoffman Reference**

Submitted herewith is a Declaration of the Inventor John P. Gillig, indicating conception of the invention of the patent at issue (USPN 7,128,660) as claimed, prior to the effective date of the reference to Hoffman which is February

23, 2004; diligence thereafter; and constructive reduction to practice by reason of filing on April 3, 2004 an application with matured into the '660 Patent. As such, Hoffman should not stand as a further issue in this proceeding.

2. In Regard To ACP Ground #1, That Is, Vincent

The issue of whether the interior of Vincent is hollow or whether the terms "void space" and "hollow" are synonymous is secondary in that neither the structure nor function of Vincent is that of a 3x3x3 volumetric matrix without which the invention as claimed in the '660 patent cannot be practiced. The teaching of Vincent is that of a simulation of internal weighting within triangular zones within virtual inclined planes. Even if not virtual, Vincent could only weight or adjust weighting within its weighting planes, not above or below them. It therefore cannot provide weighting above or below either of its virtual weighting planes, regardless of what effects may be asserted.

Once the mass and location of weights 11, 12 and 13 of Vincent are established, a virtual weighting plane P is also established, and the range of the angle (angle A in Fig. 10) of the virtual planes in Vincent is between 20 and 60 degrees relative to surfaces S. See Col. 5, Ln. 40. As such, Vincent does not purport to have a weighting capability above or below P1 or P2 (see Figs. 14 and 22 of patent. As a result the extremes of YZ weighting cannot be affected by the triangular zones of Vincent, regardless of whether or not planes P1 or P2 are virtual, and Requester asserts that the claims of the '660 patent only cover the

extremes of YZ weighting. That is, the region within each of P1 and P2 that is effectively weighable is the triangular zone TR (see Figs. 10 and 22, and Col. 6, Ln. 52-53). This is where the centers of gravity of the three weights 11, 12 and 13 converge. In other words, most of the weighting effect of the system of Vincent occurs with triangular zones TR and those zones can only exist within planes P1 or P2. These zones do not exist at any Y or Z extreme of weighting (Y1, Y3, Z1 or Z3). As such, it is questionable that any of the strategies claimed in the '660 patent could be effected by Vincent, much less two strategies thereof concurrently. This is the case not simply because of effects on ball flight but because Vincent does not teach any structure of a 3x3x3 volumetric matrix, nor any structure applicable to the claims of the '660 patent.

Minimally, Vincent cannot anticipate any claim of the '660 patent.

3. ACP Ground #2, that is, Parente

The claims of the '660 patent cannot be anticipated by Parente since Parente teaches a peripheral weighting system, not a volumetric one, which although the effects thereof may be volumetric, e.g., change in position of the center of gravity ("CG") "feel," such effects cannot be claim limitations.¹ The Requester's position that the claims do not require "volumetric weighting" has been erroneously adopted by the Examiner in that the claims when correctly

¹ An effect or result is not a claim limitation. *Bristol Myers Squibb v. Ben Venue Laboratories, Inc.*, 246 F.3d 1368, 1375 (Fed. Cir. 2001); *Syntex USA, LLC v. Apotex, Inc.*, 407 F.3d 1371, 1373 (Fed. Cir. 2005).

construed according to the criteria of *Vitronics*² (which include the specification, other claims, and the file history) could not be practiced and would have no support without reference to the 3x3x3 volumetric coordinate system set forth in the disclosure and claimed at Paragraph (b) of Claims 1 and 11.

Requester thus seeks to read the claims in a vacuum, without any reference to the file history or the Reasons for Allowance thereof, as set forth by the original Examiner, namely:

“Allowable Subject Matter

Claims 2-6 and 32-45 are allowable over the prior art references of record in view of applicant's REMARKS/ARGUMENTS on page 14, line 14 through page 15, line 21 of the amendment, received 04/27/2006."

The Applicant's Remarks Were

"In view of the above, no art of record teaches any strategy which would provide for positioning or adjustability at more than one Y value in the virtual X, Y, Z coordinate system of Applicant. Newly submitted claim 32 thus includes the limitation that a selected value of Y within any one (of four) strategies must not equal a selected value of Y within a second selected strategy. That is, multiple values of weighting on the Y-axis may exist, either as shown in the embodiment of Fig. 19 where the weighting element spans both the Y2 and Y3 positions or

² *Vitronics Corp v. Conceptronics, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996).

where multiple discreet weighting elements are provided at different points along the Y-axis as, for example, is shown in Figs. 8 and 14 of the drawings, and parts of the specification describing multiple Y-location weighting, this including single integral weighting at multiple Y-location elements which, in addition to the embodiment of Fig. 19, are also shown in Figs. 15, 16 and 17.

The newly presented claims set which begins with new independent Claim 37 clearly addresses the use of weighting means for precise compensation to minimize or maximize ball ballooning to the preference of the individual golfer, or to compensate for golf course conditions, in combination with weighting means to compensate, as may be desired, for hook or slice. No art of record addresses any strategy of compensation for ball ballooning and certainly no art of record, nor other art known to the Applicant, teaches a method of enhancing performance of a golf club or to compensate for course condition which teaches weighting criteria for ballooning on the one hand, and hook or slice on the other hand within a systematic method of club design and user adjustment. Figs. 3 and 8 of the drawings indicate how separate point weighting in the X and Y axes may be employed to address both ballooning and hook-and-slice. Correction of ballooning only requires adjustability in a line at a medium X-position between a high Y, high Z coordinate to a low Y, low Z coordinate. (See Figs. 5 and 13). However, if one wishes, as is common, to also compensate for hook or slice, an X-axis weighting is also necessary. See Figs. 3 and element C of Fig. 8. Control of ballooning only thus entails selection of appropriate Y and Z coordinates.

Clearly, factory or user compensation for both ballooning and hook-and-slice is not accomplished by any art of system of record, however combined."

In other words, in the absence of the capability of mid-axis weighting (X2, Y2 or Z2), the invention as claimed could not be practiced. Requester thereby urges a claim construction that would render the system of the '660 patent, as claimed, inoperative. Such an opinion implicates a §112 issue beyond the scope of a re-examination.

Parente itself (Col. 5, Ln. 8, 15-17) states that it is a peripheral weighting system. As such, a weighting of the (X2, Y2) cells at any of Z1, Z2 or Z3 is not possible in Parente. The consequences thereof are apparent from Figs. 4, 5, and 13 of the '660 patent. Basically, all neutral weighting options, on any axis, cannot exist in Parente. As such, Paragraph (b) of Claims 1 and 11 cannot exist or function in Parente. Again, the phrase "X, Y and Z, orthornormal coordinate system" is defined by the specification and the file history of the application that matured into the '660 and in accordance with principles of claim construction established by *Vitronics* and other prevailing case law.

Dependent Claims 7 and 15 also support the Patent Holder's definition of "X, Y and Z orthornormal coordinate system" through the principle that like or similar claim terms cannot be defined differently in different claims. These claims would have no meaning without the existence of the same X, Y, Z coordinate

system relative to Claims 1 and 11. As such, in all claims, each axis of the system must include a medium or mid-axis.

Absent the proper construction of Claims 1 and 11, no intermediate setting for any of the parameters of ball backspin, trajectory, penetration, hook, slice, or balancing would be possible. As such, Parente can be relevant only if Claims 1 and 11 are misconstrued and/or construed as inoperative under §112, an issue beyond the scope of a re-examination.

As the three charts (see Cols. 6 and 7) of the '660 patent illustrate, weighting of the '660 patent illustrate weighting at almost every possible combination of X, Y Z cells of the volumetric system. Requester thereby seeks to construe the claims *contra* to the specification and file history since, only then, could Parente or Billings (discussed below) be relevant.

In summary, Parente cannot be applicable to the claims if construed in light of the specification and file history. The Examiner apparently has not attempted to view the claims in this light but, rather, to view them in a vacuum, ignoring the limitations of Paragraph (b) of independent Claims 1 and 11 relative to Parente and other art. As such, neither Parente nor Billings can anticipate the claims of the '660 patent since both fail to teach, or suggest in any way, a virtual X, Y, Z coordinate system or even its significance which Charts 1, 2 and 3 of the patent summarize. Therein, the significance of the (X2, Y2) weighting positions,

either alone or in combination with other weighting cells, may be seen. As such, Parente and Billings can be relevant only if the phrase of Paragraph (b) regarding "X, Y, Z orthornormal coordinate system" is ignored within Claims 1 and 11 or not defined as in the specification and file history. As such, the claims, when properly construed, cannot be anticipated by Parente, since it lacks a material limitation of the claims, i.e., that of true volumetric weighting. For example, Parente at Col. 1, Lns. 37-39, distinguishes his weighing system from that of others in the statement:

"Some heads have internal cavities in which weights such as lead slugs may be placed in order to suit the needs of different golfers."

As such, Parente expressly differentiates his peripheral weighting system from that of the art, as he again iterates at Col. 2, Lns. 35-38:

"To provide the required total club weight and desired weight distribution, without requiring additional lead slugs or other more complex weighting systems which add expense to the club."

The '660 patent however is not concerned with complexity or cost as, for example, is set forth at Col. 3, Lns. 11-15 thereof which state:

"It is a further object to provide a club head, modified with a hollow interior and having selectable point, axis, vector [and] distributed linear or non-linear weights which may be inserted or removed to suit particular preferences, needs and physiologic requirements of a golfer."

As above discussed, it is apparent that access to the volumetric coordinates of Gillig's virtual matrix cannot be accomplished without a complex and precise geometric weighting system as is set forth in the many examples shown in the drawings and discussed in the text of the '660 patent.

4. **ACP Ground 4, namely Billings**

The sole claimed result of Billings is that it allows a user to move the club head's center of gravity ("CG"). This is an effect, not a structural or other claim limitation relative to an X, Y, Z or volumetric coordinate system. That is, the structure of Billings is that of placement of weighting strips or the like upon the interior of the shell of the club head. But the effect thereof is, as the title clearly states, "Customizable Center-of-Gravity Golf Club Head." Such customization entails no volumetric weighting whatsoever, much less that of all coordinates of an X, Y, Z coordinate system. Billings therefore at least lacks Element (b) of Claims 1 and 11 and provides no possibility of X2, Y2 and Z2 weighting (See Requester Exh. D-1) and only can the effect of movement of the CG in this area. Requester relies only on Fig. 5 and Col. 3, Ln. 56 of Billings for Element (b) of Claims 1 and 11 of an X, Y, Z system of a 3x3x3 matrix of weighting cells. (Requester App. D, p. 73).

Element 526 of Billings is adhered to the center of the interior of the face 110 which is a proscribed location of weighting of Paragraph (c) of Claim 1 of the '660 patent. Ergo, Billings cannot anticipate Claim 1, or any claim dependent

thereon. Other elements of Billings also appear to be contiguous to the face plate.

As well, all weighting strips of Billings apparently are symmetric about the YZ center plane of the club. This would be inconsistent with multiple weighting strategies used concurrently and with any difference in Y axis weighting between respective strategies if they could exist concurrently.

Apart from the complete absence of volumetric weighting in achieving its CG effect, Billings does not purport to affect any ball flight parameter apart from spin and trajectory. (Col. 3, Ln. 56 to Col. 4, Ln. 34).

5. What The '660 Patents Discloses And Claims

The '660 patent discloses and claims a golf club performance enhancement system that permits selectable use of weighting elements within a matrix having X, Y and Z volumetric coordinates. In other words, the invention is not a relative or peripheral weight based system but, rather, one which employs an orthonormal matrix of volumetric coordinate cells imposed upon the club (100) and employs an X, Y and Z coordinate system corresponding to the three orthonormal axes of the club. See Fig. 2 (see Col. 4, Lines 29-44). The X, Y and Z axes of the orthonormal matrix (114) provide a 3x3x3 system of 27 potential volumetric coordinates (see Col. 2, Line 3 of patent).³

³ The X, Y and Z axes include X1, X2 X3, Y1, Y2, Y3, Z1, Z2 and Z3 cells of the matrix.

The invention of the '660 patent functions in terms of low, medium or high settings within a matrix of 27 volumetric coordinates. The '660 patent, unlike any prior art, claims a volumetric weighting system which allows for the selection of two or more weighting strategies which is not possible in the prior art. Contrary to Petitioner's present characterization, the '660 patent is not merely a system of higher or lower X, Y and/or Z weightings. Rather, the term "low X" coordinate, refers to the location of the X1 coordinate within the 27 cell orthonormal matrix. Similarly, the term "high Y" refers to the location of the Y3 coordinate within the 27 potential cells of the orthonormal matrix within the void space of the club.

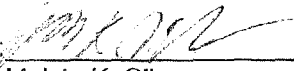
The '660 patent discloses the Patent Holder's orthonormal coordinates and specifically claims a novel and non obvious 3x3x3 coordinate matrix weighting system. The claims, drawings, and prosecution amendment of 4/27/06, make reference to a "medium X-position" in referring to the X2 position. See Claim 7 and 15; and Figs. 5 and 13. In other words, in the absence of a medium location for the X, Y and Z axes, the entire practice of the '660 patent would not be possible. Claims should be construed, where possible, to preserve their validity. A misuse of the written description requirement is to force a narrow construction of the patent claims that may give rise to a non-infringement defense. In this regard, it is a longstanding tradition in patent law that claims "amenable to more than one construction should, when it is reasonably possible to do so, be construed to preserve their validity." *Kartsen Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1384 (Fed. Cir. 2001).

The '660 patent in Figs. 3 and 5 indicates the significance of the X2, Y2 and Z2 weighting cells in golf club performance enhancement. Fig. 3 indicates the significance of the Y2 and Z2 coordinates. The specification refers to the "X2" cell coordinate eleven times. Charts 1 and 2 summarize the many embodiments that use an X2 weighting. Clearly, absent the X2, Y2 and Z2 weighting options within the 3x3x3 weighting matrix, no intermediate setting necessary for ball performance of parameters, namely, ball backspin, trajectory, penetration, hook and slice adjustment, as well as ballooning, would be possible.

And, as well, it is clear that the terms of the claims, as allowed, employed those terms as used and defined in the specification. Therefrom, it may be appreciated that neither Vincent nor Parente, nor Billings teach Limitation (b) of Claims 1 and 11 of a 3x3x3 matrix of orthonormal weighting cells, or their potential use. Requester cannot rely on the abstract concept of "inherency" to dismiss the '660 patent since the '660 patent claims precise combinations of patented structures, not merely result or effects.

For the above reasons, including Gillig's prior invention relative to Hoffman, all rejections of record should be withdrawn, and the '660 patent confirmed.

Respectfully submitted,
TRIPLE TEE GOLF INC.

By: 
Melvin K. Silverman
Reg. No. 26,234

Attachment:

Gillig Declaration Under 37 CFR 1.131

CERTIFICATE OF TRANSMITTAL

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being transmitted to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown above via the USPTO EFS Web Filing System.

June 14, 2013

Date of Deposit

Marcia Scruggs

name of Person Transmitting Paper

/Marcia Scruggs/

Signature of Person Transmitting Paper

PLEASE ADDRESS CORRESPONDENCE TO:

CUSTOMER NUMBER 27353

6/12/13

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENTEE: Gillig
RE-EXAM APPLICATION NO.: 95/002,049
RE-EXAM FILING DATE: 7/20/2012
PATENT NO.: 7,128,660
CONFIRMATION NO.: 5600
ATTORNEY DOCKET NO.: OEM-168548
EXAMINER: Graham

**SUPPLEMENTAL RESPONSE TO RESPONSE OF PATENT HOLDER UNDER
37 C.F.R. 951(a) TO ACTION CLOSING PROSECUTION (ACP)**

Mail Stop: Ex Parte Re-Exam
Central Re-Examination Unit
Hon. Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Patentee submits this Supplemental Response and asks that the following amendments be made to the submission of 14 June 2013, entitled RESPONSE OF PATENT HOLDER UNDER 37 C.F.R. 951(a) TO ACTION CLOSING PROSECUTION (ACP).

Please amend the third paragraph on Page 3 as follows:

3. ACP Ground #2, that is, Parente

The claims of the '660 patent cannot be anticipated by Parente since Parente teaches a peripheral weighting system, not a volumetric one, which although the effects thereof may be volumetric, e.g., change in position of the center of gravity ("CG") or "feel," such effects cannot be claim limitations.¹ The Requester's position that the claims do not require "volumetric weighting" has been erroneously adopted by the Examiner in that the claims when correctly construed according to the criteria of *Vitronics*² (which include the specification, other claims, and the file history) could not be practiced and would have no support without reference to the 3x3x3 volumetric coordinate system set forth in the disclosure and claimed at Paragraph (b) of Claims 1 and 11.

Please amend the second paragraph on Page 7 as follows:

Absent the proper construction of Claims 1 and 11, no intermediate setting for any of the parameters of ball backspin, trajectory, penetration, hook, slice, or balancing ballooning would be possible. As such, Parente can be relevant only if Claims 1 and 11 are misconstrued and/or construed as inoperative under §112, an issue beyond the scope of a re-examination.

¹ An effect or result is not a claim limitation. *Bristol Myers Squibb v. Ben Venue Laboratories, Inc.*, 246 F.3d 1368, 1375 (Fed. Cir. 2001); *Syntex USA, LLC v. Apotex, Inc.*, 407 F.3d 1371, 1373 (Fed. Cir. 2005).

² *Vitronics Corp v. Conceptionics, Inc.*, 90 F.3d 1576 (Fed. Cir 1996).

Please amend the second paragraph on Page 12 as follows:

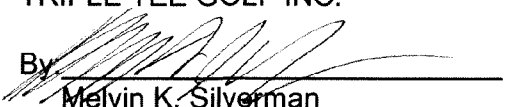
And, as well, it is clear that the terms of the claims, as allowed, employed those terms as used and defined in the specification. Therefrom, it may be appreciated that neither Vincent nor Parente, nor Billings teach Limitation (b) of Claims 1 and 11 of a 3x3x3 matrix of orthornomal weighting cells, or their potential use. Requester cannot rely on the abstract concept of "inherency" to dismiss the '660 patent since the '660 patent claims precise combinations of patented structures, not merely ~~result~~ results or effects. See patent at Col. 3, Lines 11-15.

REMARKS

Minor clerical errors in the submission of June 14, 2013 are hereby corrected.

It is noted that on Page 3, the term "effects" was underlined in the original submission. On Page 7, the term "ballooning" corrects the erroneous use of the term "balancing." The corrections on Page 12 similarly correct minor clerical errors including inadvertent deletion of the phrase "See patent at Col. 3, Lines 11-15."

Respectfully submitted,
TRIPLE TEE GOLF INC.

By 
Melvin K. Silverman
Reg. No. 26,234

CERTIFICATE OF TRANSMITTAL

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being transmitted to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown above via the USPTO EFS Web Filing System.

June 17, 2013

Date of Deposit

Marcia Scruggs

name of Person Transmitting Paper

/Marcia Scruggs/

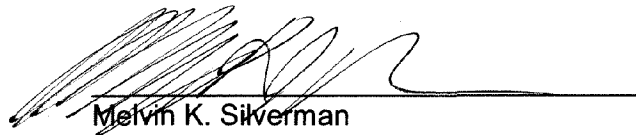
Signature of Person Transmitting Paper

PLEASE ADDRESS CORRESPONDENCE TO:

CUSTOMER NUMBER 27353

CERTIFICATE OF SERVICE

I hereby certify that on June 17, 2013, this **SUPPLEMENTAL RESPONSE TO RESPONSE OF PATENT HOLDER UNDER 37 C.F.R. 951(a) TO ACTION CLOSING PROSECUTION (ACP)** was served on SHEPPARD, MULLIN, RICHTER & HAMPTON LLP, 333 South Hope Street, 48th Floor, Los Angeles, California 90071 by depositing a copy in the mail, First Class Mail, postage prepaid.



Melvin K. Silverman

Electronic Acknowledgement Receipt

EFS ID:	16062603
Application Number:	95002049
International Application Number:	
Confirmation Number:	5600
Title of Invention:	METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM
First Named Inventor/Applicant Name:	7128660
Customer Number:	27353
Filer:	Melvin K. Silverman/Marcia Scruggs
Filer Authorized By:	Melvin K. Silverman
Attorney Docket Number:	0EKM-168548
Receipt Date:	17-JUN-2013
Filing Date:	20-JUL-2012
Time Stamp:	17:37:06
Application Type:	inter partes reexam

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	1.501 Submission by Patent Owner	95002049SupplementalResponse.pdf	496573 964b680dc2e6bf674ac7054a51d4ac91a278ca55	no	5
Warnings:					
Information:					

A1326

Total Files Size (in bytes):

496573

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

A1327

Inter-Parte

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Control No.: 95/002,049 Confirm No. 5600
Patent No.: 7,128,660
Issued: October 31, 2006
Title: METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT
AND ARTICLES RESULTANT THEREFROM
Inventor: John P. Gillig
Docket No.: 0EKM-168548
Date: July 11, 2013

**THIRD PARTY REQUESTER'S COMMENTS AFTER
RESPONSE OF PATENT HOLDER UNDER 37 C.F.R. 951(a)
TO ACTION CLOSING PROSECUTION (ACP)**

Attn: Mail Stop "Inter Partes Reexam"
Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir,

Pursuant to 37 C.F.R. § 1.947, Third Party Requester, Taylor Made Golf Company, Inc. ("Taylor Made"), hereby submits its comments after RESPONSE OF PATENT HOLDER UNDER 37 C.F.R. 951(a) TO ACTION CLOSING PROSECUTION (ACP) ("Response") regarding the *inter partes* reexamination of U.S. Patent No. 7,128,660 ("the '660 patent"), entitled "Method of Golf Club Performance Enhancement and Articles Resultant Therefrom."

I. Introduction

As set forth in the ACTION CLOSING PROSECUTION mailed May 14, 2013 ("ACP"), claims 1-6, 8, 10-14 and 16-19 of the '660 patent stand rejected as follows: (1) claims 1-6, 8, 10-14 and 16-19 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,447,309 to Vincent ("Vincent") (Ground No. 1); (2) claims 1-6, 8, 10-14 and 16-19 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,911,638 to Parente ("Parente") ("Ground No. 2); (3) claims 1-6, 8, 10-14 and 16-19 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 7,004,852 to

Billings ("Billings") (Ground No. 4); and (4) claims 1-6, 8, 10-14 and 16-19 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 7,166,040 to Hoffman et al. ("Hoffman") (Ground No. 5).

As discussed in detail below, the Patent Owner has failed to rebut the Examiner's findings that all of the limitations of claims 1-6, 8, 10-14 and 16-19 of the '660 patent are disclosed or taught by each of the prior art references. Additionally, the Patent Owner has failed to establish an earlier date of invention under 37 C.F.R. § 1.131 in an effort to swear behind Hoffman. Accordingly, the Examiner should sustain the rejections of claims 1-6, 8, 10-14 and 16-19 of the '660 patent under Ground Nos. 1, 2, 4 and 5.

II. The Examiner Should Sustain The Rejection Of Claims 1-6, 8, 10-14 and 16-19 Under 35 U.S.C. § 102(b) As Invalid Over Vincent (Ground No. 1)

On pages 2-3 of the Response, the Patent Owner argues that "Vincent cannot anticipate any claim of the '660 patent." The Patent Owner states that "neither the structure nor function of Vincent is that of a 3x3x3 volumetric matrix without which the invention as claimed in the '660 patent cannot be practiced." (Response, p. 2.) The Patent Owner seems to be arguing that limitation (b) of independent claims 1 and 11 requires a 3x3x3 volumetric coordinate system, which Vincent allegedly fails to disclose. (*Id.*, p. 4.) This argument lacks merit.

Paragraph (b) of claims 1 and 11 does not recite or require a "3x3x3 volumetric coordinate system." Independent claims 1 and 11 each recite the step of:

(b) applying a virtual X, Y, Z orthonormal coordinate system to said club in which said sole portion is partially congruent with a bottom-most xy plane thereof, in which said face plate intersects a forward-most XZ plane thereof, and in which a heel and hosel side of said club intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value corresponds to a direction of a toe of said club, an increase in Y-axis value corresponds in direction to a rear of said club, and an increase in Z-axis value corresponds to increase in height above said sole portion.

('660 patent, col. 7, lines 48-59 & col. 8, line 58 – col. 9, line 2.) As explained on pages 7-9 of the Request, the claim language creates several uncertainties as to how the club head relates to the coordinate system. Therefore, step (b) of claims 1 and 11 can be met by various orientations

of a club head in the coordinate system; indeed, there may be a limitless number of club head orientations that satisfy this step. (*Id.*)

The Examiner agreed with Taylor Made's proposed construction, stating that "[i]t is noted that the virtual axes recited are purely functional. Anything in a three-dimensional space located within an X, Y, Z coordinate system [sic]." (ORDER GRANTING REQUEST FOR *INTER PARTES* REEXAMINATION, "Order," p. 5.) The Examiner again confirmed his construction in the ACP:

The Examiner concurs with the analysis of the 'virtual' axis system as noted in the Request and in the Reply filed on 1/22/2013. Thus, Vincent, Parente, Billings and Hoffman show these virtual axes to the broad degree claimed as laid out in the Request.

(ACP, p. 8.)

While the '660 patent *discloses* a "3x3x3 system of 27 volumetric coordinates" ('660 patent, 4:33-34), the claims *fail to recite* such a limitation. Thus, the Patent Owner is again making an *improper comparison* between the disclosure of the '660 patent and the prior art, which should be ignored. *Genetics Institute v. Novartis Vaccines*, 655 F.3d 1291, 1302, 99 USPQ.2d 1713, 1722 (Fed. Cir. 2011) ("Anticipation and obviousness require the court to compare the properly construed claims to the available prior art.").

The Patent Owner also alleges that "it is questionable that any of the strategies claimed in the '660 patent could be effected by Vincent, much less two strategies thereof claimed concurrently." (Response, p. 3, emphasis in original¹). The Patent Owner maintains that Vincent "is a simulation of internal weighting within triangular zones within virtual inclined planes" and "cannot provide weighting above or below either of its virtual weighting planes, regardless of what [ball flight] effects may be asserted." (*Id.*, p. 2.) Again, there is no merit to this argument.

It is unclear exactly which limitation the Patent Owner is referring to in making these arguments. As Taylor Made has previously explained, independent claim 1 recites

¹ All emphasis in original unless otherwise noted.

selectably employing two out of a total of four weighting strategies to the club, the “strategies comprising: (i) ... providing within said void space weighting means between a low Y, low Z coordinate ... to a high Y, high Z coordinate ... ; (ii) providing within said void space weighting means between a high Y, high Z coordinate ... to a low Y, low Z coordinate ... ; (iii) modifying weighting means substantially within said void space between a low Z-coordinate ... to a high Z-coordinate ... ; or (iv) providing weighting means substantially within said void space at a low X-coordinate ... to a high X-coordinate” Similarly, independent claim 11 recites providing weighting means substantially within said void space “between a high Y, high Z coordinate ... to a low Y, low Z coordinate” (step (c)) and “between a low X-coordinate ... to a high X-coordinate” (step (d)).

As explained on pages 9-11 of the Request and on pages 9-10 of THIRD PARTY REQUESTER’S COMMENTS AFTER PATENT OWNER’S RESPONSE TO OFFICIAL ACTION UNDER 37 C.F.R. § 1.945, the broadest reasonable interpretation of these limitations is providing a weighting means in at least one position within the specified range along an axis. In other words, the claims contain no requirement of a capability of providing or moving a weighting means over the entirety of the range. This interpretation is consistent with the disclosure of the '660 patent, as it does not disclose any individual embodiment in which weights can be provided at, or moved to, any location in the club head over the entire range, from lowest to highest, along all three axes.²

Accordingly, it is irrelevant whether or not Vincent has “weighting capability above or below P1 or P2.” (Response, p. 2.) As set forth on pages 34-37, 39, and 40 of the Request, Vincent teaches weighting strategies that satisfy the requirements of claims 1 and 11.

Accordingly, the Patent Owner has failed to rebut the Examiner’s finding that claims 1-6, 8, 10-14 and 16-19 are invalid under Section 102(b) as anticipated by Vincent.

² On page 7 of the Response, the Patent Owner states that “as the three charts (see Cols. 6 and 7) of the '660 patent illustrate, weighting of the '660 patent illustrate weighting at almost every possible combination of X, Y Z [sic] cells of the volumetric system.” Taylor Made notes that the Patent Owner has not and cannot cite to a single embodiment in the '660 patent wherein weights can be provided at every coordinate along all three axes.

III. The Examiner Should Sustain The Rejection Of Claims 1-6, 8, 10-14 and 16-19 Under 35 U.S.C. § 102(b) As Invalid Over Parente (Ground No. 2)

On pages 3-9 of the Response, the Patent Owner argues that Parente does not anticipate the claims of the '660 patent. The Patent Owner alleges that “Parente teaches a peripheral weighting system, not a volumetric one, which although the effects thereof may be volumetric, e.g. change in position of the center of gravity (‘CG’) ‘feel,’ such effects cannot be claim limitations.” (Response p. 3.) The Patent Owner maintains that the Examiner erred in construing the claims to not require volumetric weighting because the claims “could not be practiced and would have no support without reference to the 3x3x3 volumetric coordinate system set forth in the disclosure and claimed at Paragraph (b) of Claims 1 and 11.” (*Id.*) The Patent Owner is mistaken.

As discussed in section II, *supra*, the claims do not recite or require volumetric weighting or a 3x3x3 volumetric coordinate system. The claims are met by various orientations of a club head in the coordinate system. Moreover, a “virtual X, Y, Z orthonormal coordinate system” can be applied to any golf club head, including Parente. This is consistent with the Examiner’s finding that “the virtual axes recited are purely functional” and that Parente satisfies this limitation (Order, p. 5; ACP, p. 8.) Thus, it is irrelevant whether or not Parente teaches “peripheral” weighting.

The Patent Owner alleges that dependent claims 7 and 15 of the '660 patent, which are not at issue in this reexamination, support its interpretation. (Response, pp. 6-7.) Claims 7 and 15 recite “securing a strip-like weighting element over said void space at about a (Y2-Y3, Z2) position and spanning all X positions” ('660 patent, 8:35-37 & 10:8-10.) The Patent Owner argues that “[t]hese claims would have no meaning without the existence of the same X, Y, Z coordinate system relative to Claims 1 and 11. As such, in all claims, each axis of the system must include a medium or mid-axis.” (Response, pp. 6-7.)

In making these arguments, the Patent Owner apparently is trying to use dependent claims 7 and 15 as an aid in interpreting the other claims of the patent. Although in general this is a permissible use of dependent claims, the Patent Owner’s attempted use of it here is illogical. Dependent claims 7 and 15 are presumptively narrower than the claims from which

they depend, *i.e.*, claims 1 and 11. *See AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1242, 68 USPQ.2d 1280, 1286 (Fed. Cir. 2003) (“Under the doctrine of claim differentiation, dependent claims are presumed to be of narrower scope than the independent claims from which they depend.”). As narrower claims, claims 7 and 15 have limitations not found in independent claims 1 and 11. Thus, while a weight in a medium or mid-axis position in a golf club head *may* satisfy the requirements of claim 1, it is not required by claim 1. The fact such a weight is required by dependent claim 7 is simply a reflection of the fact that claim 7 is narrower than claim 1. There is nothing about dependent claims 7 and 15 that supports the Patent Owner’s proposed claim construction.

The Patent Owner also cites to remarks made during the original prosecution of the '660 patent as alleged support for construing the claims to require a “3x3x3 volumetric coordinate system.” (Response, pp. 4-6.) The Patent Owner argues that these remarks establish that “in the absence of the capability of mid-axis weighting (X2, Y2 or Z2), the invention as claimed could not be practiced” and that Taylor Made urges “a claim construction that would render the system of the '660 patent, as claimed, inoperative.” (Response, p. 6.) While the Patent Owner correctly admits that such a Section 112 issue is beyond the scope of reexamination and should not be addressed in this proceeding (*id.*), the argument is also nonsensical and against established case law.

If the claims require a “volumetric coordinate system” and/or “the capability of mid-axis weighting” to satisfy the enablement requirement, the claims should have been drafted to recite such requirements. Here, the claims lack such limitations and it is improper to import limitations into claims of the '660 patent in order to preserve their validity. *See Retractable Techs. v. Becton, Dickinson and Co.*, 659 F.3d 1369, 1372-73 (Fed. Cir. 2011) (“Absent clear lexicography or disclaimer in the specification, we cannot import that limitation into the claims. We simply cannot rewrite the claims, not even to save their validity.”). The Federal Circuit has made clear that “[e]ven where a patent describes only a single embodiment, claims will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words of expressions of manifest exclusion or restriction.” *Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1381 (Fed. Cir. 2009).

Accordingly, it is irrelevant whether Parente is capable of having a weighting element at an X2, Y2 coordinate. (Response, p. 6.) As discussed in section II, *supra*, the broadest reasonable interpretation of the claims is providing a weighting means in at least one position within the specified range along an axis. As set forth on pages 52-56, 59, and 60 of the Request, Parente teachings weighting locations that satisfy the requirements of claims 1 and 11.

The Patent Owner also argues that “absent the proper construction of Claims 1 and 11, no intermediate setting for any of the parameters of ball backspin, trajectory, penetration, hook, slice, or balancing would be possible.” (Response, p. 7.) While the Patent Owner has repeated this argument on several occasions, the Examiner has made clear (in agreement with Taylor Made) that “these limitations are purely functional and carry no patentable weight.” (ACP, p. 8.) The functional statements simply describe the natural result of placing a weighting element at the claimed location and, therefore, are not claim limitations. *Bristol-Myers Squibb v. Ben Venue Labs.*, 246 F.3d 1368, 1375, 58 USPQ.2d 1508, 1513 (Fed. Cir. 2001) (holding that a statement of intended result is not a claim limitation); *Syntex (U.S.A.) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1378, 74 USPQ.2d 1823, 1828 (Fed. Cir. 2005) (the term “in a stabilizing amount” simply describes the intended result of using the weight to volume ratios recited in the claims).

Accordingly, the Patent Owner has failed to rebut the Examiner’s finding that claims 1-6, 8, 10-14 and 16-19 are invalid under Section 102(b) as anticipated by Parente.

IV. The Examiner Should Sustain The Rejection Of Claims 1-6, 8, 10-14 and 16-19 Under 35 U.S.C. § 102(e) As Invalid Over Billings (Ground No. 4)

On pages 9-10 of the Response, the Patent Owner presents several arguments for its position that Billings does not anticipate the claims of the '660 patent. All the Patent Owner's arguments lack merit.

First, the Patent Owner alleges that “the structure of Billings is that of placement of weighting strips or the like upon the interior of the shell of the club head” and that “[s]uch customization entails no volumetric weighting whatsoever, much less that of all coordinates of an X, Y, Z coordinate system.” (Response, p. 9.) The Patent Owner states that Billings “at least lacks Element (b) of Claims 1 and 11 and provides no possibility of X2, Y2, and Z2

weighting...and only can the [sic] effect of movement of the CG in this area.” (*Id.*) The Patent Owner is wrong on all accounts.

As discussed in sections II and III, *supra*, the claims do not recite or require “volumetric weighting.” A “virtual X, Y, Z orthonormal coordinate system,” as *recited* in the claims, can be applied to any golf club head, including Billings. This is consistent with the Examiner’s findings in the ACP. (ACP, p. 8.) Additionally, the claims do not require the capability of providing or moving a weighting means over the entirety of the range within the coordinate system. The broadest reasonable interpretation of the relevant weighting strategy limitations is providing a weighting means in at least *one* position within the specified range along an axis. As discussed on pages 73-76, 79, and 80 of the Request, Billings satisfies the weighting strategy requirements of claims 1 and 11.

Second, the Patent Owner again argues that Billings cannot anticipate claim 1 of the ’660 patent, or any corresponding dependent claim, because weighting “element 526 of Billings is adhered to the center of the interior of the face 110 which is a proscribed location of weighting in Paragraph (c) of Claim 1 of the ’660 patent.” (Response, pp. 9-10.) Again, the Patent Owner is incorrect.

The Patent Owner is alluding to the requirement of independent claim 1 that “at least one weighting means thereof is not contiguous to any part of said face plate,” and the requirement of dependent claim 13 that “any selected value of Y of Step (e) [of claim 12] is not contiguous with any part of said face plate.” These claims, however, require *only one* weighting means to not be contiguous with any part of the face plate. As explained on pages 74 and 83 of the Request, Billings’ weights secured at locations 514, 516, 518, 520, 522, 524, 528, 530, 532 are not contiguous with any part of the face plate. (*See Billings*, col. 3, line 56 – col. 4, line 42; Fig. 5.) The Examiner agreed with this interpretation in the ACP, stating that “[t]he majority of weight strips are not contiguous with the front face of the head.” (ACP, p. 5.)

Finally, the Patent Owner argues that “Billings does not purport to affect any ball flight parameters apart from spin and trajectory.” (Response, p. 10.) As discussed in section III, *supra*, the functional statements recited in claims 1 and 11 (e.g., to compensate for hook or slice) merely describe the intended result of placing a “weighting element” at the coordinates specified

in the limitation and, therefore, are not claim limitations. *Bristol-Myers Squibb, supra*, 246 F.3d at 1375, 58 USPQ.2d at 1513; *Syntex (U.S.A.) LLC, supra*, 407 F.3d at 1378, 74 USPQ.2d at 1828.

Accordingly, the Patent Owner has failed to rebut the Examiner's finding that claims 1-6, 8, 10-14 and 16-19 are invalid under Section 102(e) as anticipated by Billings.

V. The Examiner Should Sustain The Rejection Of Claims 1-6, 8, 10-14 And 16-19 Under 35 U.S.C. § 102(e) As Invalid Over Hoffman (Ground No. 5)

A. The Patent Owner has Failed to Successfully Swear behind Hoffman under 37 C.F.R. § 1.131

The Patent Owner submitted a second DECLARATION UNDER 37 C.F.R. 1.131 ("Gillig Decl.") attempting to establish a date of invention prior to the filing date of Hoffman in order to remove Hoffman as a reference. The application for Hoffman was filed in the United States on February 23, 2004, and the Patent Owner is attempting to establish a date of invention as early as January 16, 2004. (Response, pp. 1-2; Gillig Decl., ¶¶ 3, 5 & 14.)

As explained below, the Patent Owner has failed in its attempt to establish invention of the subject matter claimed in the '660 patent prior to the filing date of Hoffman.

1. *The requirements for establishing prior invention under 37 C.F.R. § 1.131*

37 C.F.R. § 1.131 provides that a party, in certain circumstances, may establish, by a showing of fact, invention prior to a reference applied in a rejection and thus remove that reference as available prior art. Specifically, Section 1.131 provides in pertinent part:

(a) When any claim of an application or a patent under reexamination is rejected, the inventor of the subject matter of the rejected claim, the owner of the patent under reexamination, or the party qualified under §§ 1.42, 1.43, or 1.47, may submit an appropriate oath or declaration to establish invention of the subject matter of the rejected claim prior to the effective date of the reference or activity on which the rejection is based

(b) The showing of facts shall be such, in character and weight, as to establish reduction to practice prior to the effective date of the reference, or conception of the invention prior to the effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the

application. Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration or their absence must be satisfactorily explained.

Thus, under Section 1.131, a patent owner must either establish reduction to practice prior to the effective date of the reference or conception of the invention prior to the effective date coupled with due diligence from prior to the date of the reference to the constructive or actual reduction to practice of the claimed invention.

2. *The Patent Owner has failed to establish conception of each limitation of the claimed invention prior to the effective date of Hoffman*

In order to prove conception, it is fundamental that the oath or declaration must “establish invention of the **subject matter of the rejected claim** prior to the effective date of the reference.” 37 C.F.R. § 1.131(a) (emphasis added). “[T]he record must show that the inventors themselves had a permanent idea of **every feature of the claimed invention** and provide corroborating evidence that would enable one of ordinary skill in the art to make the invention.” *Ex Parte Olchanski et al.*, Appeal No. 2010-1333 at p. 5, 2012 WL 5872286 at *3 (BPAI Nov. 20, 2012) (emphasis added). *See also, Kridl v. McCormick*, 105 F.3d 1446, 1449, 41 USPQ2d 1686, 1689 (Fed. Cir. 1997) (“Conception must include every feature or limitation of the claimed invention.”). Conception also turns on the inventor’s ability to describe the invention with particularity; that is, the idea must be sufficiently formed so that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation. *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1228, 32 USPQ2d 1915, 1919 (Fed. Cir. 1994). Further, conception must be proved by corroborating evidence which shows that the inventor disclosed to others his “completed thought expressed in such clear terms as to enable those skilled in the art” to make the invention. *Coleman v. Dines*, 754 F.2d 353, 359, 224 USPQ 857, 862 (Fed. Cir. 1985).

The Gillig declaration includes a transcript (Exhibit A) of a meeting that took place on January 16, 2004 between the inventor, John P. Gillig, and his attorney, and sketches (Exhibit B) that were allegedly brought to the meeting by Mr. Gillig. Mr. Gillig argues that, based on this evidence, “it is apparent that I possessed the concept, as claimed, of the 3x3x3

system of volumetric weighting at least by January 16, 2004, and for all times material herewith, prior to the effective date” of Hoffman. (Gillig Decl., ¶ 5.) Mr. Gillig is incorrect.

While the transcript refers to “golf club heads,” “27 virtual boxes,” an “X-axis,” and “weights,” it fails to address any of the specific limitations of claims 1-6, 8, 10-14 and 16-19 of the '660 patent, as required by Section 1.131. The transcript is a haphazard, difficult-to-follow discussion about the “concept” or “idea” of applying 27 imaginary or virtual boxes to a golf club head. The transcript fails to discuss specific claim limitations such as “selectably employing two of the following club weighting strategies to the club head ... ” or “providing within said void space weighting means between a low Y, low Z coordinate ... to a high Y, high Z coordinate.” In fact, virtually every limitation recited in the claims is absent from the discussion in transcript.

The sketches included in Exhibit B of the Gillig Decl. similarly fail to address any of the specific limitations of claims 1-6, 8, 10-14 and 16-19 of the '660 patent. For example, the drawings fail to show a single weighting means within a golf club head and, thus, fail to provide support for the limitation of “employing weighting strategies,” including “providing within said void space a weighting means” The drawings also lack any correlation with the drawing figures in the '660 patent.

Accordingly, neither the January 16, 2004 transcript nor the sketches, establish that the Patent Owner “had a permanent idea of *every feature of the claimed invention.*” *Ex Parte Olchanski et al.*, Appeal No. 2010-1333 at p. 5, 2012 WL 5872286 at *3 (BPAI Nov. 20, 2012) (emphasis added).

The Patent Owner also relies upon a transcript (Exhibit C) of a meeting that took place on February 25, 2004 between Mr. Gillig and his attorney, as well as some sketches (Exhibit D) that Mr. Gillig allegedly brought with him to that meeting. (Gillig Decl., ¶¶ 4, 7-9, 12 & 14; Response, pp. 1-2.) Importantly, however, this meeting took place two days *after* the application for Hoffman was filed. Thus, regardless of the content of this meeting or the Exhibit D sketches, they cannot establish conception of the invention *prior* to the effective date of Hoffman. See 37 C.F.R. § 1.131(a) (the oath or declaration must “establish invention of the subject matter of the rejected claim *prior* to the effective date of the reference.” (Emphasis added)).

Accordingly, the Patent Owner has not established conception of each feature of the claimed invention prior to the filing date of Hoffman.

3. *Since the Patent Owner has failed to establish prior conception, its showing of due diligence is irrelevant*

Because the Patent Owner has not established conception of each feature of the claimed invention prior to the filing date of Hoffman, the Patent Owner's attempts to show due diligence under Section 131 are irrelevant and should be ignored. *See* MPEP § 715.07(a) ("In determining the sufficiency of a 37 CFR 1.131 affidavit or declaration, diligence need not be considered unless conception of the invention prior to the effective date is clearly established, since diligence comes into question only after prior conception is established. *Ex parte Kantor*, 177 USPQ 455 (Bd. App. 1958).").

4. *The Patent Owner has failed to show reduction to practice of the claimed invention prior to the filing date of Hoffman*

In order to establish actual reduction to practice, the inventor must prove that he constructed an embodiment or performed a process that met all the limitations of the claim, and that he determined that the invention would work for its intended purpose. *Cooper v. Goldfarb*, 154 F.3d 1321, 1327, 47 USPQ2d 1896, 1901 (Fed. Cir. 1998). The Patent Owner fails to present any evidence that Mr. Gillig actually reduced the claimed invention to practice. Thus, the Patent Owner has failed to show reduction to practice of the claimed invention prior to the filing date of Hoffman.

Accordingly, the Patent Owner has failed in its attempt to establish a date of invention prior to the filing date of Hoffman. Thus, Hoffman is prior art to the claims of the '660 patent under 35 U.S.C. § 102(e)(1).

B. The Patent Owner Has Not Made Any Attempt To Overcome The Substantive Rejection Based On Hoffman

The Patent Owner has not made any attempt to overcome the substantive rejection of claims 1-6, 8, 10-14 and 16-19 of the '660 patent under Section 102(e) as anticipated by Hoffman. The Patent Owner's arguments rest solely on its unsuccessful attempt to establish an invention date earlier than Hoffman under 37 C.F.R. § 1.131. (Response, pp. 1-2.)

For the reasons discussed in section V.A., *supra*, the Patent Owner has failed in its attempt to swear behind Hoffman under 37 C.F.R. § 1.131 and, therefore, Hoffman remains prior art to the claims of the '660 patent. Accordingly, for the reasons set forth on pages 5-8 of the ACP and pages 29-31 and 73-98 of the Request, claims 1-6, 8, 10-14 and 16-19 of the '660 patent are invalid under 35 U.S.C. § 102(e) as anticipated by Hoffman.

VI. The Patent Owner Cannot Rely Upon The Disclosure Of The '660 patent To Distinguish The Prior Art

The Patent Owner oddly concludes his Response by making summary arguments about what the '660 patent allegedly discloses and claims in a further effort to distinguish over the prior art. (Response, pp. 10-12.) For example, the Patent Owner argues that the '660 patent “discloses and claims a golf club performance enhancement system that permits selectable use of weighting elements within a matrix having X, Y and Z volumetric coordinates.” (Response, p. 10.) The Patent Owner further claims that “the invention is not a relative or peripheral weight based system but, rather, one which employs an orthonormal matrix of volumetric coordinate cells imposed upon the club (100) and employs an X, Y and Z coordinate system corresponding to the three orthonormal axes of the club.” (*Id.*) “The X, Y and Z axes of the orthonormal matrix (114) provide a 3x3x3 system of 27 potential volumetric coordinates (see Col. 2, Line 3 of patent).” (*Id.*)

As discussed above in sections II-V, what the Patent Owner refers to as ***disclosed and claimed*** is at most ***disclosed but not claimed***. While the Patent Owner may be able to point to sections of the specification and drawings of the '660 patent that disclose a 3x3x3 system of 27 potential volumetric coordinates (Response, pp. 10-12), the claims fail to recite or require these elements. Therefore, the Patent Owner cannot rely on these disclosures to distinguish over the prior art. *Genetics Institute*, 655 F.3d at 1302, 99 USPQ.2d at 1722 (Fed. Cir. 2011) (“Anticipation and obviousness require the court to compare the properly construed claims to the available prior art.”).

VII. Conclusion

For the reasons set forth above, Taylor Made respectfully requests the Examiner to maintain the rejections of claims 1-6, 8, 10-14 and 16-19 of the '660 patent. Since the Patent

Owner has failed to rebut the rejections set forth in the ACP, Taylor Made respectfully requests the Examiner to issue a Right of Appeal Notice.

Respectfully submitted,

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

By: 

Gary A. Clark

Registration No. 28,060

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Telephone: (213) 620-1780
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Acknowledgement Receipt

The USPTO has received your submission at **18:50:40** Eastern Time on **11-JUL-2013**.

No fees have been paid for this submission. Please remember to pay any required fees on time to prevent abandonment of your application.

eFiled Application Information

EFS ID	16294672
Application Number	95002049
Confirmation Number	5600
Title	METHOD OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM
First Named Inventor	7128660
Customer Number or Correspondence Address	27353
Filed By	Gary Alan Clark/Betty Rodriguez
Attorney Docket Number	0EKM-168548
Filing Date	20-JUL-2012
Receipt Date	11-JUL-2013
Application Type	inter partes reexam

Application Details

Submitted Files	Page Count	Document Description	File Size	Warnings
168548- 3rdPartyRequestorComments.pdf	15		150735 bytes	⚡ PASS
		Document Description	Page Start	Page End
		Third Party Requester Comments after Action Closing Prosecution	1	14
		Reexam Certificate of Service	15	15

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

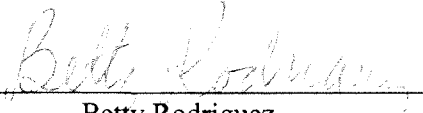
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

If you need help:

- *To ask questions about Patent e-Filing, or to suggest improvements to the online system, or report technical problems, please call the Patent Electronic Business Center at (866) 217-9197 (toll free) or send email to EBC@uspto.gov.*
- *Send general questions about USPTO programs to the [USPTO Contact Center \(UCC\)](#).*
- *For general questions regarding a petition, or requirements for filing a petition, contact the Office of Petitions Help Desk at 1 800-786-9199.*

CERTIFICATE OF SERVICE

This is to certify that I have this day, July 11, 2013, caused to be served a copy of the foregoing THIRD PARTY REQUESTER'S COMMENTS AFTER RESPONSE OF PATENT HOLDER UNDER 37 C.F.R. 951(a) TO ACTION CLOSING PROSECUTION (ACP) by placing a copy in the United States Mail, postage pre-paid, addressed to Melvin K. Silverman, Esq., M. K. Silverman & Associates, P.C., 500 West Cypress Creek Road, Suite 350, Ft. Lauderdale, Florida 33309.


Betty Rodriguez



UNITED STATES PATENT AND TRADEMARK OFFICE

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Interpact

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/002,049	07/20/2012	7128660	0EKM-168548	5600

27353	7590	08/02/2013
MELVIN K. SILVERMAN AND ASSOCS PC		
500 WEST CYPRESS CREEK ROAD		
SUITE 350		
FT. LAUDERDALE, FL 33309		

EXAMINER	
GRAHAM, MATTHEW C	

ART UNIT	PAPER NUMBER
3993	

MAIL DATE	DELIVERY MODE
08/02/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Transmittal of Communication to Third Party Requester <i>Inter Partes</i> Reexamination	Control No.	Patent Under Reexamination	
	95/002,049	7128660	
	Examiner	Art Unit	
	MATTHEW C. GRAHAM	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

____ (THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS) ____

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
12275 EL CAMINO REAL, SUITE 200
SAN DIEGO, CA 92130

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

Right of Appeal Notice (37 CFR 1.953)	Control No.	Patent Under Reexamination
	95/002,049	7128660
	Examiner	Art Unit
	MATTHEW C. GRAHAM	3993

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Responsive to the communication(s) filed by:

Patent Owner on 17 June, 2013

Third Party(ies) on 11 July, 2013

Patent owner and/or third party requester(s) may file a notice of appeal with respect to any adverse decision with payment of the fee set forth in 37 CFR 41.20(b)(1) within **one-month or thirty-days (whichever is longer)**. See MPEP 2671. In addition, a party may file a notice of **cross** appeal and pay the 37 CFR 41.20(b)(1) fee **within fourteen days of service** of an opposing party's timely filed notice of appeal. See MPEP 2672.

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

If no party timely files a notice of appeal, prosecution on the merits of this reexamination proceeding will be concluded, and the Director of the USPTO will proceed to issue and publish a certificate under 37 CFR 1.997 in accordance with this Office action.

The proposed amendment filed _____ ☐ will be entered ☐ will not be entered*

*Reasons for non-entry are given in the body of this notice.

- 1a. ☒ Claims 1-6,8,10-14 and 16-19 are subject to reexamination.
- 1b. ☒ Claims 7,9 and 15 are not subject to reexamination.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are confirmed. [Unamended patent claims].
4. ☐ Claims _____ are patentable. [Amended or new claims].
5. ☒ Claims 1-6,8,10-14 and 16-19 are rejected.
6. ☐ Claims _____ are objected to.
7. ☐ The drawings filed on _____ ☐ are acceptable. ☐ are not acceptable.
8. ☐ The drawing correction request filed on _____ is ☐ approved. ☐ disapproved.
9. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d) or (f). The certified copy has:
☐ been received. ☐ not been received. ☐ been filed in Application/Control No. _____.
10. ☐ Other _____

Attachments

1. ☐ Notice of References Cited by Examiner, PTO-892
2. ☐ Information Disclosure Citation, PTO/SB/08
3. ☐ _____

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RIGHT OF APPEAL NOTICE

1. Receipt is acknowledged of the responses by the Patent Owner on 6/14/2013 and 6/17/2013, including the Declaration by Gillig. Receipt is also acknowledged of the reply by the Third Party Requester on 7/11/2013. The Supplemental Response filed by the Patent Owner on 6/17/2013 has been entered as it relates only to correcting minor informalities of the response filed on 6/14/2013.

2. **Ground #1** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Vincent.

A detailed analysis as to how Vincent shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix A) and is hereby incorporated by reference.

Specifically, Vincent discloses four embodiments of a golf club head having three peripheral weights 11, 12, 13. Vincent teaches that the centers of gravity of the weights form a triangle, and that the "weights are located substantially in a weight plane which is inclined with respect to the plane of the ground when the head rests on the ground." (See col. 2, lines, 30-33.) Vincent discloses two embodiments in which the inclined weight plane extends from the upper-front to the lower-rear of the golf club head (Figs. 7-10 & 11-14), and two embodiments in which the inclined weight plane extends from the lower-front to the upper-rear of the golf club head (Figs. 15-18 & 19-22). Vincent discloses that the weights 11, 12, 13 may be "separate from the head and are attached" to the golf club head in the form of screw weights and thus be two selectably employable weighting strategies within a virtual X, Y, Z coordinate system.

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. (See col. 8, lines 3-6 and Fig. 25.) At least one of these weights 11 is in a void space and not contiguous with the front face of the club head.

3. **Ground #2** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Parente.

A detailed analysis as to how Parente shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix B) and is hereby incorporated by reference. Specifically, Parente discloses the use of screws 14, 16, 18 as weights in a golf club head. The screws are received in through bores 43, 44, 45 in the sole plate 12 and into threaded bores 40, 41, 42 in the body 10. (See col. 3, lines 40-44 and Figs. 1-4.). Parente provides a "number of different sets of screws of different lengths, and thus different weights." (See col. 3, lines 49-50.) Parente states that "the only limitation on maximum screw length is the height of the cavity itself" (See col. 4, lines 62-63), thus teaching use of a longer screw weight, up to the maximum permissible length. The screws are used to adjust weighting in the club head and thereby alter the center of gravity and performance of the golf club. (See col. 1, lines 28-67; col. 4, lines 8-33.) "The screws can be changed quickly and easily as desired to adjust head weight and weight distribution, allowing a head to be fine tuned to a particular golfer's requirements." (See col. 2, lines 37-41 .)

In one example, Parente discloses providing seven different sets of screws. "Any screw from any of the seven sets may be used at any of the three positions, providing a very large number of possible different weight distributions, and a large degree of adjustability in the same club head, while maintaining an optimum total weight. By using

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different screw weights at the different positions, the position of the center of gravity as well as the size of the sweet spot, and the overall 'feel' and playing characteristics of the club can be readily adjusted." (See col. 4, lines 16-24.) Parente further discloses that more than three screws can be used in the sole "for an even greater range of weight adjustment." (See col. 4, line 64 - col. 5, line 2.) Parente teaches that "the screws may be changed readily until the optimum weighting for a particular golfer is achieved." Thus, it would be understood that any number of weighting strategies may be employed in Parente's club head. The weights are not contiguous with the face of the golf club head.

4. Ground #4 Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Billings.

A detailed analysis as to how Billings shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix D) and is hereby incorporated by reference. Specifically, Billings discloses a golf club head 100 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See, col. 2, lines 8-14.) The golf club head in Billings has an empty internal cavity 118 ("void space") behind the face plate 110 and above a sole portion 112 for placing weighting material within the internal cavity of the club head. (See col. 2, lines 45-49.) Billings discloses a golf club head having a removable port cover 120 for accessing the interior cavity 118 for placement of weighting material, such as lead tape, into the interior cavity. (See col. 2, lines 51-54.) The placement of weighting material allows a user to adjust or customize the location of the center of gravity of the golf club head. "FIG. 5 illustrates the hollow golf club head 100 with the

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crown portion 114 separated from the sole and wall portion 112 and rotated to face the inner wall towards the reader in order to illustrate potential placements of weighting material." (See col. 3, lines 47-50.) Billings discloses the effects of placing weights in each of the locations shown in Fig. 5 to selectably employ two weighting strategies within a virtual X, Y, Z coordinate system.. The majority of weight strips are not contiguous with the front face of the head.

5. **Ground #5** Claims 1-6, 8, 10-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoffman.

A detailed analysis as to how Hoffman shows the features of 1-6, 8, 10-14 and 16-19 is set forth in the claim chart (Appendix E) and is hereby incorporated by reference. Specifically, Hoffman discloses a golf club head 28 having an adjustable weighting system that allows a user to move the club head's center of gravity and thereby enhance its performance. (See col. 3, line 58 - col. 4, line 5.) Hoffman's club head 28 includes four recesses 96, 98, 102, 104 formed in the wall of the club head body 92. (See col. 7, lines 36-40.) Each recess is positioned behind the face plate and above a sole portion of the club head. (See Figs. 2-5.) Hoffman's "sole" includes both a curved bottom portion that rests on the ground and a skirt or sidewall portion that is above the ground. Hoffman's recesses 96, 98, 102, 104 are all located in the skirt or sidewall portion and thus not on the sole portion to the degree claimed. The recesses are considered to be voids. Hoffman discloses the use of a set of weights 24 including two weight assemblies 30 of about 10 grams and two screw weights 32 of about 2 grams that are sized to be received in any of the four recesses 96, 98, 102, 104 formed

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in the club head 28. (See col. 3, lines 58-66.) Varying placement of the weights enables the golfer to vary launch conditions in the club head, for optimum distance and accuracy. More specifically, the golfer can adjust the position of the club head's center of gravity, for greater control over the characteristics of launch conditions and, therefore, the trajectory of the golf ball." (See col. 3, line 66 - col. 4, line 5.) Hoffman discloses a wrench by which a golfer can attach and remove weights 24 to selectably employ two weighting strategies within a virtual X, Y, Z coordinate system.

CONCLUSION

6. Regarding the 131 Declaration by Gillig, filed on 6/14/2013, the Declaration is completely devoid of any evidence of conception or reduction to practice for the claimed invention of a method of selectably employing weighting strategies or applying a virtual X, Y, Z axis. Consequently, the Declaration is insufficient to swear behind the application date of February 23, 2004 of Hoffman.

As to Vincent, the Examiner concurs with the comments provided by the Third Party Requester in the response of 7/20/2012. No 3x3x3 volumetric coordinate system is claimed. Patent Owner also argues that Vincent merely shows a simulation. This is incorrect. Vincent clearly teaches in Col. 8, lines 3-6, that the weights can be formed separate from the head. And as to the weighting strategies, again the Examiner concurs with the Third Party Requester, only two weighting strategies are claimed.

Regarding Parente, the virtual axis recited are purely functional. As to the arguments relating to dependent claims 7 and 15, these arguments are deemed moot as claims 7 and 15 have not been rejected or reexamined.

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Regarding Billings, again the volumetric weighting has not been claimed and the argument is deemed moot.

7. **This is a RIGHT OF APPEAL NOTICE (RAN);** see MPEP § 2673.02 and § 2674. The decision in this Office action as to the patentability or unpatentability of any original patent claim, any proposed amended claim and any new claim in this proceeding is a FINAL DECISION.

No amendment can be made in response to the Right of Appeal Notice in an *inter partes* reexamination. 37 CFR 1.953(c). Further, no affidavit or other evidence can be submitted in an *inter partes* reexamination proceeding after the right of appeal notice, except as provided in 37 CFR 1.981 or as permitted by 37 CFR 41.77(b)(1). 37 CFR 1.116(f).

Each party has a **thirty-day or one-month time period, whichever is longer,** to file a notice of appeal. The patent owner may appeal to the Board of Patent Appeals and Interferences with respect to any decision adverse to the patentability of any original or proposed amended or new claim of the patent by filing a notice of appeal and paying the fee set forth in 37 CFR 41.20(b)(1). The third party requester may appeal to the Board of Patent Appeals and Interferences with respect to any decision favorable to the patentability of any original or proposed amended or new claim of the patent by

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Page 8

filing a notice of appeal and paying the fee set forth in 37 CFR 41.20(b)(1).

In addition, a patent owner who has not filed a notice of appeal may file a notice of cross appeal within **fourteen days of service** of a third party requester's timely filed notice of appeal and pay the fee set forth in 37 CFR 41.20(b)(1). A third party requester who has not filed a notice of appeal may file **a notice of cross appeal within fourteen days of service** of a patent owner's timely filed notice of appeal and pay the fee set forth in 37 CFR 41.20(b)(1).

Any appeal in this proceeding must identify the claim(s) appealed, and must be signed by the patent owner (for a patent owner appeal) or the third party requester (for a third party requester appeal), or their duly authorized attorney or agent.

Any party that does not file a timely notice of appeal or a timely notice of cross appeal will lose the right to appeal from any decision adverse to that party, but will not lose the right to file a respondent brief and fee where it is appropriate for that party to do so. If no party files a timely appeal, the reexamination prosecution will be terminated, and the Director will proceed to issue and publish a certificate under 37 CFR 1.997 in accordance with this Office action.

8. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 7,128,660 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise

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the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282, 2286 and 2686.

9. Please mail any communications to:

Attn: Mail Stop "Inter Partes Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria VA 22313-1450

Please FAX any communications to:

(571) 273-9900
Central Reexamination Unit

Please hand-deliver any communications to:

Customer Service Window
Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Matthew C. Graham/

Matthew C. Graham
CRU Examiner
3993
(571) 272-7116

Conferees: /AK/
/PCE/

A1355

Best Available Copy



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/002,049	07/20/2012	7128660	0EKM-168548	5600

27353	7590	10/08/2013
MELVIN K. SILVERMAN AND ASSOCS PC		
500 WEST CYPRESS CREEK ROAD		
SUITE 350		
FT. LAUDERDALE, FL 33309		

EXAMINER	
GRAHAM, MATTHEW C	

ART UNIT	PAPER NUMBER
3993	

MAIL DATE	DELIVERY MODE
10/08/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Transmittal of Communication to Third Party Requester <i>Inter Partes</i> Reexamination	Control No.	Patent Under Reexamination	
	95/002,049	7128660	
	Examiner	Art Unit	
	MATTHEW C. GRAHAM	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
12275 EL CAMINO REAL, SUITE 200
SAN DIEGO, CA 92130

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

Best Available Copy

NOTICE OF INTENT TO ISSUE INTER PARTES REEXAMINATION CERTIFICATE	Control No. 95/002,049 Examiner MATTHEW C. GRAHAM	Patent Under Reexamination 7128660 Art Unit 3993
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

1. ☒ Prosecution on the merits is (or remains) closed in this *inter partes* reexamination proceeding. This proceeding is subject to reopening at the initiative of the Office or upon petition. Cf. 37 CFR 1.313(a). A Certificate will be issued in view of:
 - a. ☐ The communication filed on _____ by _____
 - b. ☒ Patent owner's failure to file an appropriate timely response to the Office action dated 02 August, 2013.
 - c. ☐ The failure to timely file an Appeal with fee by all parties to the reexamination proceeding entitled to do so. 37 CFR 1.959 and 41.61.
 - d. ☐ The failure to timely file an Appellant's Brief with fee by all parties to the reexamination proceeding entitled to do so. 37 CFR 41.66(a).
 - e. ☐ The decision on appeal by the ☐ Board of Patent Appeals and Interferences ☐ Court dated 02 August, 2013
 - f. ☐ Other: _____
2. ☒ The Reexamination Certificate will indicate the following:
 - a. Change in the Specification: ☒ Yes ☐ No
 - b. Change in the Drawings: ☐ Yes ☒ No
 - c. Status of the Claims:
 - (1) Patent claim(s) confirmed:
 - (2) Patent claim(s) amended (including dependent on amended claim(s)):
 - (3) Patent claim(s) cancelled: 1-6, 8, 10-14 and 16-19.
 - (4) Newly presented claim(s) patentable:
 - (5) Newly presented cancelled claims:
 - (6) Patent claim(s) ☐ previously ☐ currently disclaimed:
 - (7) Patent claim(s) not subject to reexamination: 7, 9 and 15.
3. ☐ Note the attached statement of reasons for patentability and/or confirmation. Any comments considered necessary by patent owner regarding reasons for patentability and/or confirmation must be submitted promptly to avoid processing delays. Such submission(s) should be labeled: "Comments On Statement of Reasons for Patentability and/or Confirmation."
4. ☐ Note attached NOTICE OF REFERENCE CITED, (PTO-892).
5. ☐ Note attached LIST OF REFERENCES CITED (PTO/SB/08 or PTO/SB/08 substitute).
6. ☐ The drawings filed on 02 August, 2013 is: ☐ approved ☐ disapproved.
7. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. § 119(a) - (d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
 - ☐ been received.
 - ☐ not been received.
 - ☐ been filed in Application No. _____
 - ☐ been filed in reexamination Control No. _____
 - ☐ been received by the International Bureau in PCT Application No. _____

* Certified copies not received:
8. ☒ Note Examiner's Amendment.
9. ☐ Other: _____

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the Central Reexamination Unit at the mail, FAX, or hand-carry addresses given at the end of this Office action.

U.S. Patent and Trademark Office
PTOL-2068 (07-10)

Part of Paper No. 20131003

NOTICE OF INTENT TO ISSUE *INTER PARTES* REEXAMINATION CERTIFICATE

A1358

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Application/Control Number: 95/002,049

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Art Unit: 3993

NIRC

1. The Patent Owner has failed to timely respond to the Right of Appeal Notice, mailed on 8/2/2013. In that Notice, all requested claims 1-6, 8, 10-14 and 16-19 were rejected. Accordingly, claims 1-6, 8, 10-14 and 16-19 are hereby canceled by Examiner's Amendment. Claims 7, 9 and 15 were not subject to reexamination.
2. Any inquiry concerning this communication should be directed to Matthew C. Graham at telephone number 571-272-7116.

Please mail any communications to:
Attn: Mail Stop "Inter Partes Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria VA 22313-1450

Please FAX any communications to:
(571) 273-9900
Central Reexamination Unit

Please hand-deliver any communications to:

Customer Service Window
Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

A1359

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Application/Control Number: 95/002,049

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Art Unit: 3993

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Matthew C. Graham/

Matthew C. Graham

CRU Examiner

3993

(571) 272-7116

Conferees: /EDL/

/PCE/

A1360

**United States Court of Appeals
for the Federal Circuit**

Triple Tee Golf, Inc. v. Taylor Made Golf Company, Inc., 2015-1564

CERTIFICATE OF SERVICE

I, Robyn Cocho, being duly sworn according to law and being over the age of 18, upon my oath depose and say that:

Counsel Press was retained by M.K. SILVERMAN & ASSOCIATES, counsel for Appellant to print this document. I am an employee of Counsel Press.

On **February 8, 2016**, counsel has authorized me to electronically file the foregoing **Joint Appendix** with the Clerk of Court using the CM/ECF System, which will serve via e-mail notice of such filing to all counsel registered as CM/ECF users, including any of the following:

Gary A. Clark
Bridgette A. Agness
Sheppard, Mullin, Richter & Hampton, LLP
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213-620-1780
gclark@sheppardmullin.com
bagness@sheppardmullin.com
Attorney for Defendant-Appellee

Paper copies will also be mailed to the above principal counsel at the time paper copies are sent to the Court.

Upon acceptance by the Court of the e-filed document, six paper copies will be filed with the Court within the time provided in the Court's rules.

February 8, 2016

/s/ Robyn Cocho
Counsel Press